

OCTOBER 1952 2/6

BUSINESS

The Journal of Management in Industry



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EDW/14

BUSINESS

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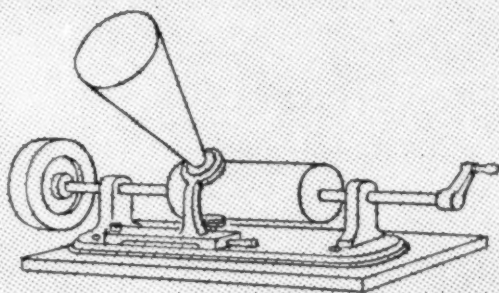
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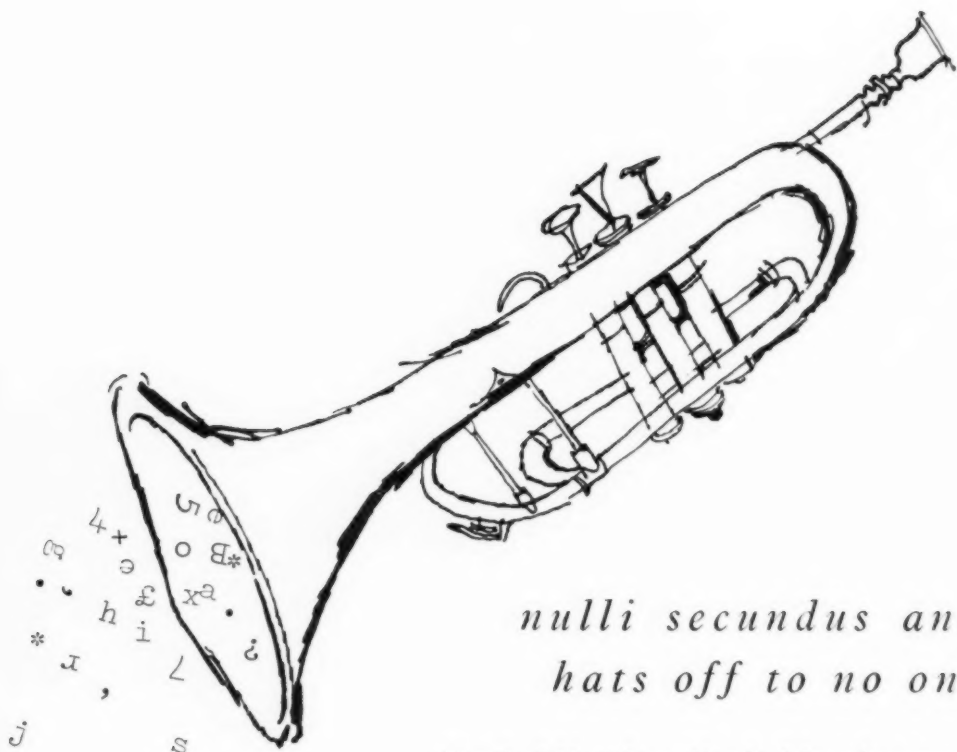
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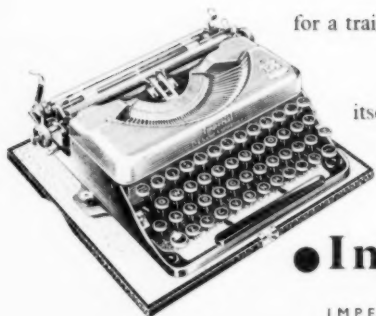


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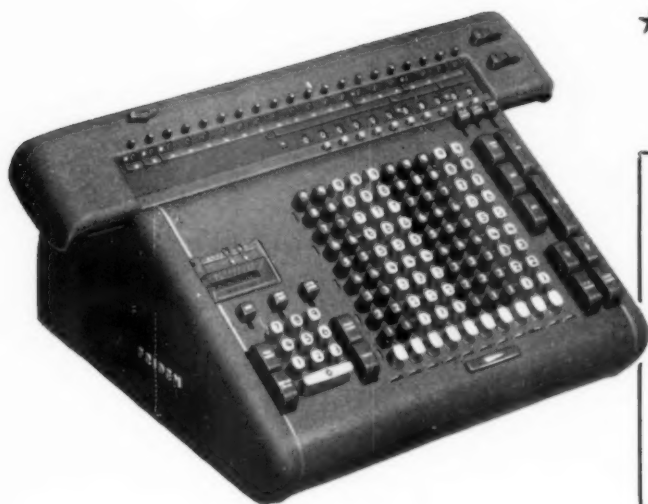


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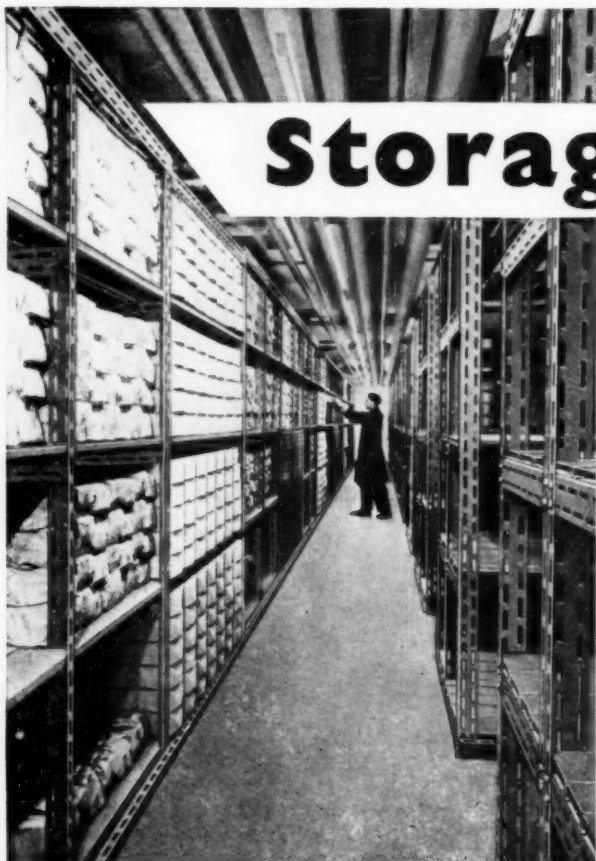
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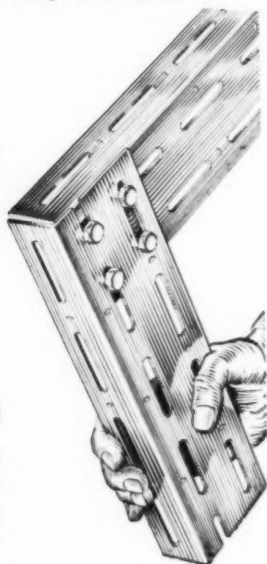
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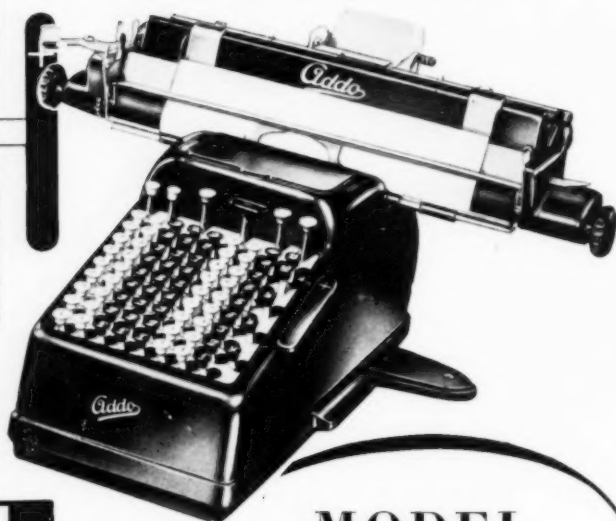
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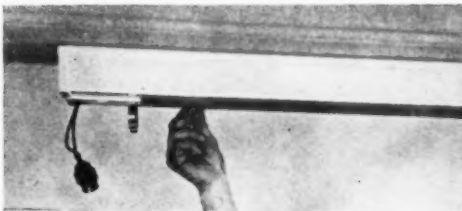
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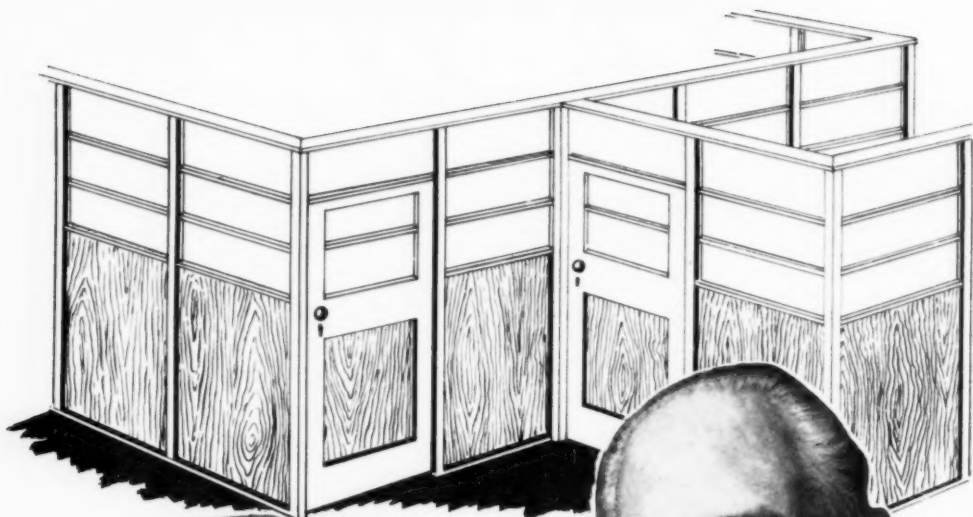
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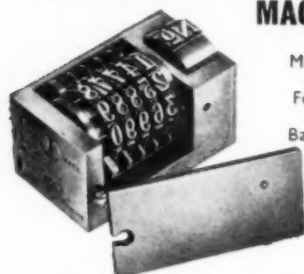
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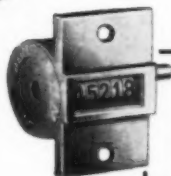
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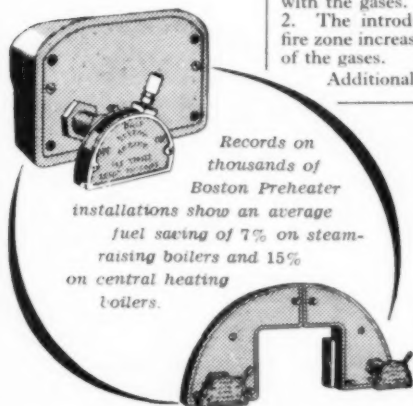
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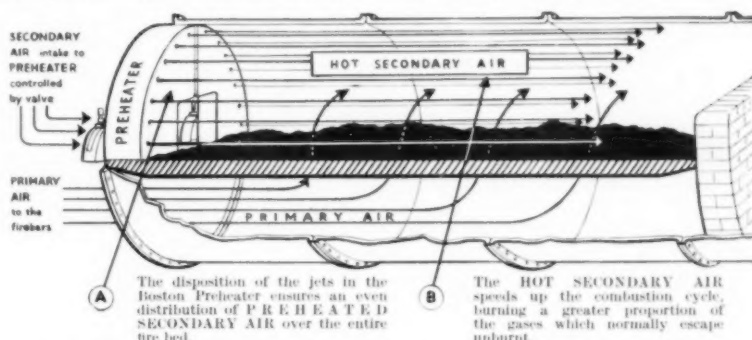
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OCTOBER, 1952

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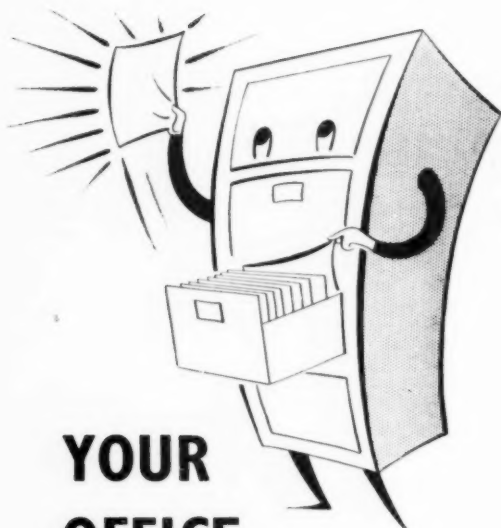
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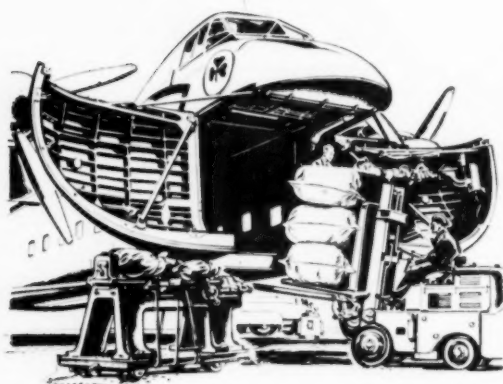
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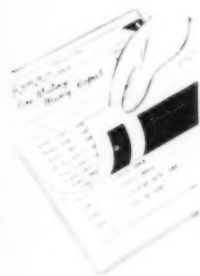


She's only half a girl!

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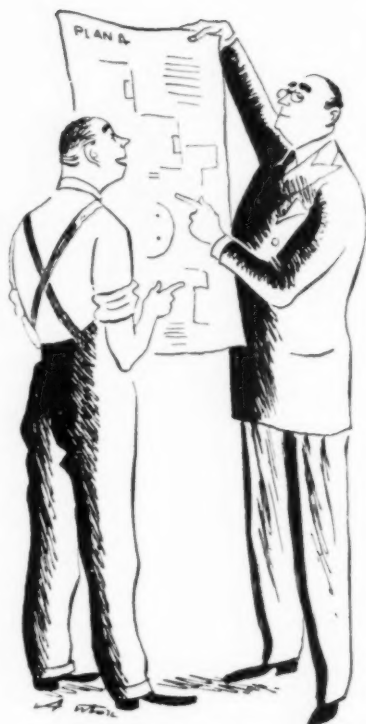
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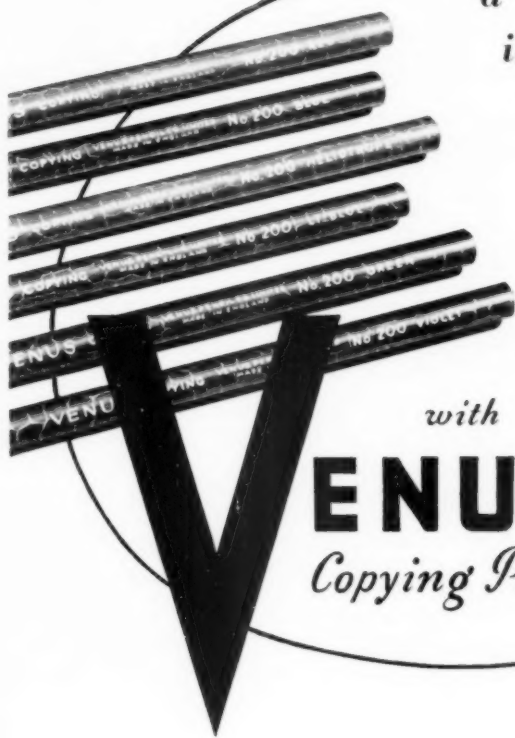
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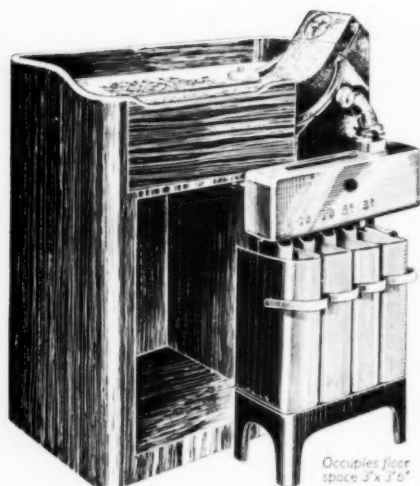
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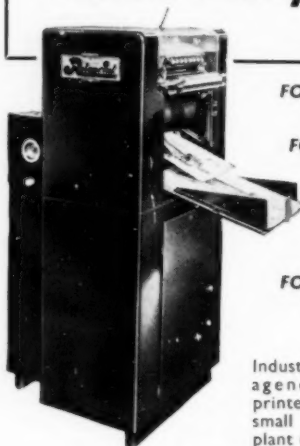
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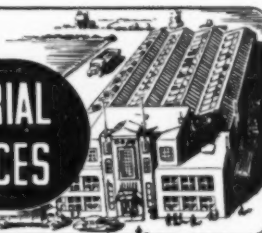
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The MARCH of BUSINESS

NATIONALIZATION TOMORROW

WHAT WILL the next Labour government (if and when) do about extending nationalization? The evidence suggests that Labour leaders have learned some of the economic facts of life from their last term in office. The latest policy discussion pamphlet issued by the Labour Party, *Problems of Public Ownership*, by Ernest Davies, M.P., is a cautious document that postulates more problems than it solves.

Responsible trade union leaders, too, tend to look askance at the nationalization they have got already. But the defeat of the general council of the T.U.C. on this issue at Margate suggests that the bulk of the rank and file are still wedded to the magic formula of the ownership of the means of production as a panacea for all our economic ills. And that means that the Labour hierarchy will—albeit reluctantly—have to do something.

One ingenious suggestion, of which more will certainly be heard, was put forward by the trade union veteran, E. P. Harries, at the Summer School of the Institution of Production Engineers. The next Labour government, he prophesied, would nationalize no new industries. Instead, they would take over, as a going concern, one leading firm in each of a number of industries and run them in competition with the other firms in the industry. By this means, they would break down monopolies and restrictive practices on both sides, where they existed, and re-establish a general free-for-all state of competition. "And that," commented Mr Harries, "will be fun."

★ ★ ★

BETWEEN sessions at the Summer School of the Institution of Production Engineers, a handful of the engineers strolled down to the local village. The labels in their lapels bore such names as Rolls-Royce, Daimler, English Electric, and B.T.H. An old man lounged in the open door of an ancient smithy, and the party got into conversation with

him. Someone commented that the blacksmith's was a dying trade. The old man agreed, but vigorously defended his art. "It's a skilled trade," he asserted, "a highly skilled trade. Horses' hooves are ticklish things to handle—you're only an eighth of an inch between right and wrong!"

★ ★ ★

HOLDING THE HORSES

MODERN management methods are percolating into the Navy. The work of a Naval Motion Study Unit since it was formed in 1947 was described to the Psychology section of the British Association by Mr. K. F. H. Murrell. The unit was born after films of drill on a six-inch gun had shown that No. 6 of the team stood stiffly to attention at the back of the gun, doing absolutely nothing. No

reason could be found for this until a sergeant-major of the Boer War recalled that No. 6 had been the man who held the horses.

After eliminating No. 6, the Unit had turned to more serious matters. It had reduced by one-third the time taken to rescue a man from a burning naval aircraft, had entirely re-designed the crash-fender system for naval aircraft, to involve only one man instead of a dozen, and had re-designed gun loading so that a modern gun could be loaded by two men instead of eight.

Motion study is thus increasing productivity on the high seas as well as on land. It is also saving costs, for one study revealed that ships' bathrooms needed not, as was commonly thought, one wash-basin to five men, but only one to 11. In most naval ships, apparently, only 15 per cent. of the hands shave before lunch, except on flagships, where the figure rose to 50 per cent.

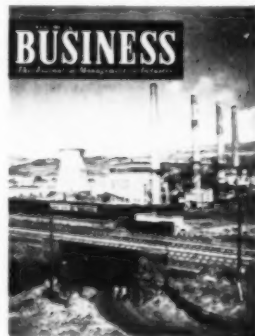
A similar sign of the times is the

Operation Enterprise

IN this issue, BUSINESS prints an important survey of the development areas and trading estates set up in the late 'thirties. An editorial team found a flourishing hive of industry in what, fifteen short years ago, were depressed areas—and found out how this had been achieved. The colour photograph on our cover, specially taken for BUSINESS by F. Dunscombe Honiball, A.R.P.S., shows one of the centres visited, the Treforest Trading Estate, near Pontypridd, in South Wales.

NEXT month's issue will include a special supplement giving a preview of the Business Efficiency Exhibition to be held at Glasgow on November 4 to 14.

MAIN item in the issue, will be the first of three articles on the know-how of Organization and Methods work. These are based on a report by a leading expert of H.M. Treasury published by the United Nations. This report is not yet available in this country, so once again BUSINESS is first in the field.



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SPECIALISTS IN SCIENTIFIC POSTURAL SEATING

acceptance by the Admiralty of a recommendation to extend piece-work and payment by results in the Royal Naval Dockyards. The question of joint production committees is also being investigated by their Lordships.

★ ★ ★

THE STAFF School of Frederick Smith and Co., Wire Manufacturers, Ltd., described in the August issue of *BUSINESS*, is breaking fresh ground. The directors have announced open awards of 75, 50 and 25 guineas for papers written by anyone over 25 who has had five years' or more experience in the ferrous wire industry. Two sets of awards will be made, one for papers on technical subjects, the other for administrative subjects. Completed papers must be submitted by January 31st, 1953.

★ ★ ★

WOMEN AT WORK

MARRIED women—3,070,000 of them—constitute 43 per cent. of all women in employment in Great Britain. But the proportion varies widely both by area and by industry. For Scotland and Wales, the figure is only 32 per cent.—a hint for Scottish and Welsh employers short of labour.

The highest percentage of married women (56) is found in the "non-metalliferous mining products" group—due to the high percentage (62) in the china and earthenware industry. The next highest percentage (51) is in the textile industries, though the engineering, vehicles and metal goods industries were a close third (50 per cent.).

Only 30,000 married women under 20 were employed, but the numbers increase steadily with age. Of women workers between 30 and 50, well over 60 per cent. are married, with the 40 to 44 age group heading the list.

Women workers seem to be a well-established tradition in British industry. Archaeologists excavating a Roman pottery near Stanmore, Middlesex, have unearthed a number of feminine oddments, such as faience beads, an ornamental pin, a bronze ring, a gold ring and an eyebrow tweezer, some on the site of the kilns. "We are beginning to think that women must have been employed in the pottery at the time," comments

SALIENT FIGURES OF THE MONTH

		Latest Month	Increase (+) or Decrease (—) on a		
			Month Ago	Year Ago	
"BUSINESS" INDICES					
Production ...	(1948=100)	* 115.6	— 1.0	— 0.7	
Purchasing Power do.	* 102.4	+ 1.3	— 0.7	

MANPOWER

Total Manufacturing					
Industries ...	(thousands)	8,535	— 36	+ 148	
Cotton spinning and weaving do.		256	— 3	— 66	
Coal (on colliery books) ... do.		719	+ 1	+ 18	
Reg. unemployed (U.K.) ... do.		453.8	— 34.8	+ 244.1	

PRODUCTION

Index of production (1948=100)	*	110	— 5	— 12	
Coal (average weekly output) ...	(thousand tons)	3,765	— 463	— 175	
Steel ingots and castings (do.) do.		↑ 280	+ 6	+ 13	
Cotton yarn (do.) ...	(million lb.)	* 9.7	— 1.5	— 9.0	
Woven wool fabrics (do.)	(million linear yards)	31.53	+ 5.91	— 4.32	
Passenger cars (do.) ...	(thousands)	7.51	— 0.69	— 2.11	
Commercial vehicles (do.) ... do.		4.52	+ 0.12	— 0.46	
Permanent houses completed do.		20.74	— 0.38	+ 4.12	

TRADE

Value of Imports (£ millions)	↑ 263.4	— 26.6	— 105.1
Value of exports do.	↑ 180.7	— 27.1	— 45.5
Freight train traffic (million tons)	↑ 5.42	+ 0.12	+ 0.08
Retail sales ... (1947=100)	* 114	— 2	+ 5

FINANCE

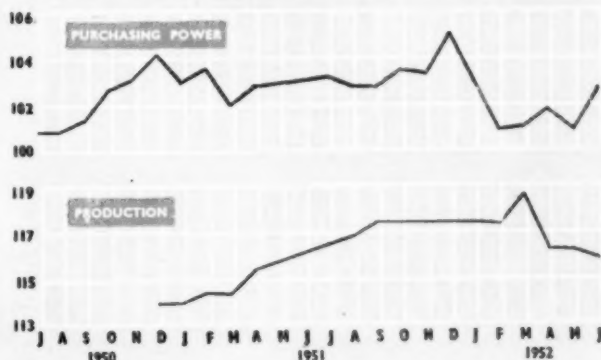
Currency in circulation (£m.)	1,423	+ 39	+ 97	
Deposits in London Clearing Banks				
do.	6,063	— 1	— 111	
Provincial cheque clearings (average working day) ... do.	6.04	— 0.16	— 1.09	

WAGES AND PRICES

Weekly wage rates (1947=100)	129	Same	+ 9	
Retail prices ... do.	↑ 137	— 1	+ 11	
Raw materials prices (1949=100)	↑ 157.4	— 1.9	— 22.0	
Mech. eng. ind. ... do.	↑ 151.9	— 0.9	+ 14.8	
Elec. machinery ... do.	↑ 169.3	— 1.3	+ 12.9	
Building, etc. ... do.	↑ 133.4	— 0.6	+ 2.2	
Import prices ... (1951=100)	97	— 2	— 8	
Export prices ... do.	105	— 1	+ 3	

*June. †August. ‡Four weeks to July 13th, 1952.
All other figures refer to July.

"BUSINESS" INDICES (1948=100)





How to cut absenteeism

The main cause of lost time in industry, according to the Medical Research Council, is sickness absence. Much of this absenteeism can be traced to the transmission of contagious ailments through the use of communal towels.

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the leader of the party. "But they may, of course, have been bringing their menfolk's lunch."

★ ★ ★

FOLLOWING the revision of the Interim Index of Industrial Production, the BUSINESS Production Index on page 39 has been similarly revised, with 1948 as the new base year. To facilitate comparison, the BUSINESS Purchasing Power Index has also been converted to 1948 as a base year, but no other alteration has been made in the method of calculation.

★ ★ ★

DOES PSYCHOLOGY HELP?

THE AVERAGE businessman is a little sceptical of the new methods, based on various types of psychological test, used for selecting men for appointments or promotion. So, too, was Professor P. E. Vernon, president of the psychology section of the British Association, in his address at the B.A.'s Belfast meeting.

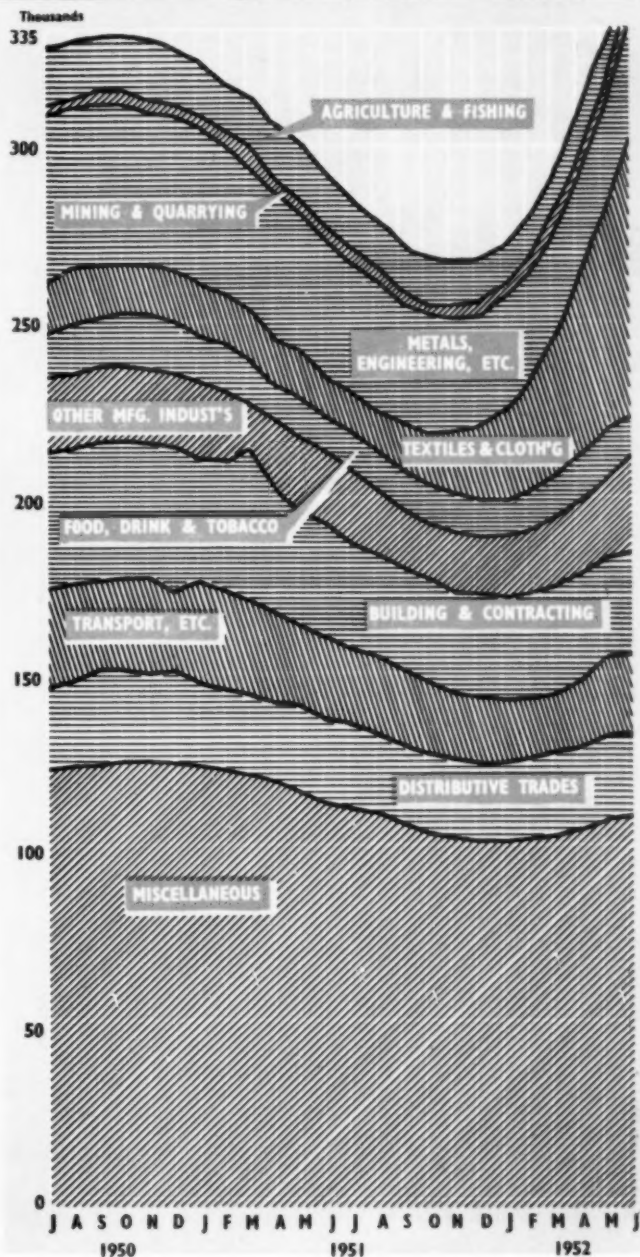
"We are certainly not in a position to provide the youth employment officer or the personnel official with a straightforward battery of personality tests at all comparable to our tests of aptitudes and attainments," he confessed. Nor was he much happier about interviews, as a means for assessing personality and predicting a candidate's success. Two interviewers seeing a candidate independently tended to arrive at very different conclusions about him. Group tests are a useful ex-

HOW THE CHART IS CALCULATED

This month's chart shows trends in unemployment in Great Britain over the last two years. The total figures are sub-divided according to industry. To eliminate seasonal effects, a twelve-month moving average of the official returns of the Ministry of Labour and National Service has been calculated for each industry. This is entered in the last of the twelve months covered.

OCTOBER, 1952

TRENDS IN UNEMPLOYMENT



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tension of interviewing, but do not meet the need for scientific methods of personality assessment.

Research had shown, said Professor Vernon, that teachers' ratings of such traits as persistence among secondary pupils are less accurate than the pupils' ratings of one another, and that fellow-cadets or recruits are better able to predict officer quality than are the recruits' commanding officers—a valuable pointer for the firm that has a good joint consultation set-up.

★ ★ ★

SCOTTISH readers may be interested in a one-day conference in Glasgow on October 14 on "Stock Records and Control" organized by the Glasgow and West Scotland Branch of the Office Management Association. Main speaker is Mr. James G. Mair, treasurer of the Western Regional Hospital Board. O.M.A. headquarters have now published the papers on "Communications" (7s. 6d.) and "Correspondence and Mailing" (6s.) read at previous one-day conferences in London. Promised for next month is a report on trade unionism among clerical workers.

★ ★ ★

THE END OF A.A.C.P.

WITH THE issue of its final report, the Anglo-American Council on Productivity closes its account; the final balance shows a very handsome profit to industrialists who have participated either as members of the teams or merely as readers of the reports. Follow-up reports will continue to be issued (another, on the electricity supply industry, has just appeared), but larger-scale activities will have to await the formation of the promised British Productivity Council. This appears to have run into teething troubles, and it seems unlikely that the national conference on productivity promised for the autumn can now be held this year.

This is perhaps as well, since the autumn is becoming a little crowded. The Institution of Works Managers is holding a productivity conference in Birmingham on October 16 to 18, and the Harrogate conference of the British Institute of Management follows on November 13 to 15. And, of course, there is the Business

OCTOBER, 1952

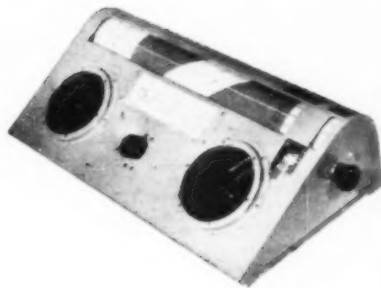
PEOPLE • PRODUCTS • PLACES



ELECTRONIC APPOINTMENT—A director of Mullard, Ltd.—T. E. E. Goldup, M.I.E.E.—has been appointed chairman of the Board of Governors of the Ministry of Supply School of Electronics, at Malvern. Mr. Goldup's many activities include representation of his company on various committees of the Radio Industry Council. He also serves on certain committees of the British Standards Institution and organizations connected with electronics.

SHIPPING FORECAST

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Exhibition in Glasgow. All in all, the conscientious businessman is going to be kept busy enough in the next few months.

★ ★ ★

BUSINESSMEN with a joint consultation problem will welcome the "Works Committee Members' Handbook" just published (2s.) by the Industrial Welfare Society. Small enough to slip in an overall pocket, it is designed for the man who does not know much about procedure. Included: draft constitution, standing orders, and glossary of unfamiliar terms (e.g., dividend, interest, selling costs).

★ ★ ★

REACHING RURAL MARKETS

THE SIZE of a town does not necessarily measure its importance as a market for the surrounding rural areas. So says Dr. H. E. Bracey, of Bristol University, as a result of a survey carried out in Somerset.

From questionnaires, Dr. Bracey discovered the town (or towns) commonly visited by the people of each parish in Somerset for the services of seven kinds of shop and eight professions. One point per parish was allotted for each service, and each town was credited with its due score of points or part-points.

Results showed that Taunton, with a population of 33,000, was twice as important a service centre as Bath, with 80,000. Yeovil and Bridgwater, with 23,000 and 22,000 residents, came second and third, while Weston-super-Mare, with 40,000, proved less important than Frome (11,000), Minehead (7,000) or Wells (6,000). A less unwieldy index of four items—chemist, bank, shopping and cinema—gave substantially the same results. The shops of all but one of the first eight towns served a larger area than the professional men, and the reverse was true of the remaining 30 service centres. Dr. Bracey's results were given to the summer school of the Town Planning Institute.

★ ★ ★

RESearch workers in Sweden who have recently been studying the typist report that, while the ordinary typewriter requires merely a tap of fourteen ounces to depress a key efficiently, the average typist uses a sledge-

OCTOBER, 1952

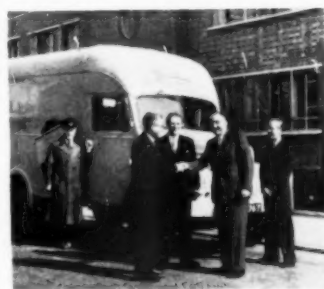
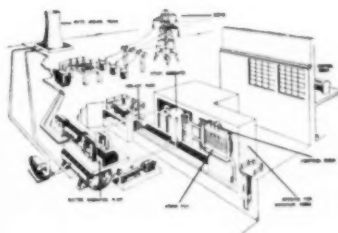
PEOPLE • PRODUCTS • PLACES

BRITISH EXTENSION—John L. McCaffrey, president of the worldwide International Harvester Co., laying the foundation stone for an extension to British International Harvester's plant at Doncaster.



JET-PROOF CARPET—Developed by Shell Petroleum is a new protective treatment for the surface of airfield runways and service aprons. Known as the Jet-Resistant Asphalt Carpet, it can withstand heat and blast effects from jet engines. The picture shows the asphalt-laid surface after being subjected to the full exhaust stream of turbojet engines. The upper untreated section is fully disintegrated; the lower section overlaid with the Jet-Resistant Carpet is merely scored by stones.

ATOM POWER PLAN—Forming part of a recent Ministry of Supply display in Lancashire, this diagram is the research workers' conception of the atomic power station of the future. Heat from an atomic pile is used to produce steam which in turn drives dynamos generating current. It is expected that an experimental unit on these lines will soon be built which will foreshadow the first atomic power station.



ADDRESS OVERSEAS—K.B. Robinson, managing director of Adrema, Ltd., says au revoir to G. Martin one of the company's leading technicians on his departure to the Continent with a mobile exhibition unit. The van, containing the latest Bradma addressing machines, will back-up displays by agents at exhibitions in Switzerland and France. This is the latest feature of the company's selling policy.



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hammer blow of some sixteen pounds. In other words, the typist expends in a day the force equivalent to that needed to shift 1,200 tons of coal—and to no special purpose.

★ ★ ★

ARE ACCURATE COSTS WORTH IT?

ABSOLUTE accuracy in determining costs is extremely expensive, and in many cases may not be worth the effort involved. Such is the conclusion of a special report made by the sub-committee of the National Health Service responsible for the interim report on costing on which existing cost returns are based.

There are many special fields of hospital activities where accuracy cannot be achieved, since many apportionments must rest on personal opinion. Much more useful and practical is the technique of comparative costing, provided that the cost units adopted adequately describe the quantum of work done or service rendered.

The sub-committee has set out as its main objective the apportionment of hospital expenditure between in-patients and out-patients, while determining at the same time the costs of special departments. The report points out that "the attainment even of our restricted aims will necessitate an increase in administrative costs, including the employment of additional staff," and recommends certain short-cut methods designed to hold the increase to a minimum.

★ ★ ★

FOR THE first time since before the war, bricklayers on a Glasgow housing site have laid more than 800 bricks a day. The figure shot up by more than 56 per cent. in the first week of a new incentives plan. The basis of the scheme is that men are paid a bonus of about 5s. a hundred for bricks laid in excess of the target of 480 a day. Different rates operate for different types of building.

The average number of bricks laid by bricklayers at Glasgow since the war has been slightly more than 450 a day. In the first week of the scheme, at Merrylea, the bricklayers averaged 820 a day. In the second week, their figure dropped to 700, but in the third week it rose again to 740. The scheme is now to be applied to all the direct labour departments of the Glasgow corporation.

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New Men: New Industries

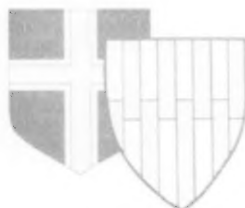
By THE EDITOR



SOUTH WALES



CUMBERLAND



NORTH EAST ENGLAND



SCOTLAND

AN economy cannot survive without the constant influx of new blood into its industrial veins. The pessimists complain that, what with the dead hand of bureaucracy controlling raw materials and labour, and the crushing competition offered by mammoth monopolies to any newcomer, there is no room in Britain today for the small man with a big idea and a limited capital.

BUSINESS has always vigorously combated such Jeremiahs. This special issue is one more blow in the campaign. We have sought to find the men who, in the last decade, in spite of war and post-war difficulties, have seen their opportunity, seized it, and made good. And we have sought to find out just how they have done it. How well we have succeeded may be judged from the following pages.

NEW factory building, in the last decade, has been concentrated almost exclusively in the development areas. So it was to the development areas that we went in our search for new ideas.

To cover all the development areas in detail would require an encyclopædia that would be out of date before it could be completed. We have concentrated on a representative sample. We took four areas, and a member of the **BUSINESS** editorial team visited each. Philip Dyer went to the Treforest Trading Estate in South Wales; Brian Cummings went to the West Cumberland area; Frank Casey to the Hillington Trading Estate in Glasgow, and Robert Spark to the Team Valley Estate on Tyneside.

Each man saw officials of the estate company, of local trading associations, of local governments. Each paid many visits to factories in his area, talked to many businessmen. Each wrote many thousands of words about what he saw.

BACK in London, the manuscripts were checked and counterchecked. Stories concerning branch factories of large undertakings whose main activities were elsewhere were discarded. The rest were gone through carefully in a whole series of editorial conferences, before the final choice was made. That choice was not easy.

For the trading estates—only 15 years ago officially classed as “distressed”—are today on top of the world—thriving hives of new men and new industries.

THE 19 case histories here presented are typical. In the development areas as a whole, they might be multiplied a hundredfold. Compared with the mammoth organizations whose names (or more often than not initials) are household words, the firms are small. But even the mammoths, 15 short years after their formation, were still puny. In another half-century, another I.C.I., another Unilever, another A.E.L., may have sprung from the Welsh valleys, the Cumberland hills, the Tyneside estuary or the banks of the Clyde. Who knows? One thing is certain—the drive and enterprise are already there—as they have always been.

BUSINESS

surveys the Development Areas:
Philip Dyer reports on

SOUTH WALES



IN the 1930's South Wales and coal were synonymous. When the slump came there was no other work. In 1934, there were 110,000 unemployed in the area.

TO give them work, the Government set up the South Wales and Monmouthshire Trading Estates, Ltd., to erect an estate at Treforest in the Taff Valley. Model factories at low rents and loans at low interest rates were offered to industrialists.

TODAY, 80 different firms employ some 10,000 workers in industries

ranging from aeroplane engine production and repair to wrist-watch straps, from alloy production to dyeing and cleaning. Ex-miners, who until 1936 had never seen a factory, are now managers, foremen and skilled operatives in scores of trades.

TREFOREST is full. The estate company have opened other estates—at Bridgend, Hirwaun, Wrexham and Swansea. The policy of diversification has paid dividends to South Wales—and to the businessmen who, as the following articles show, saw its possibilities.

Quality is Controlled by Standard Practices

How to Work a 3-Shift System Seven Days a Week

Three main policies have enabled this firm to cope with the twin problems of rapid growth and continuous three-shift working.

1. Enlightened handling of human beings.
2. Standardization of the processes of production, despite variability in raw material.
3. Close inspection and comparison of the product at every stage of manufacture. Cross-shift confusion has been avoided. The three shift managers' hours of duty overlap by thirty minutes. Though responsible to a works manager, each decides how the latter's instructions are to be executed. Over-all control is exercised by the general manager through a daily staff meeting.

RAPID growth brings particular organizational problems. Such is the case of Treforest Chemical Co., Ltd., whose factory, opened in 1938, had an initial output of 10 tons of technical gelatine a week. Today, with an output of 100 tons of edible gelatine a week, it is the largest gelatine factory in Europe and possibly in the world, with 400 workers operating on three shifts, 24 hours a day, seven days a week.

The organizational problem was further complicated by the technical processes involved. Though these are peculiar to this industry, the way difficulties have been tackled contains management lessons of general applicability in shift-working factories.

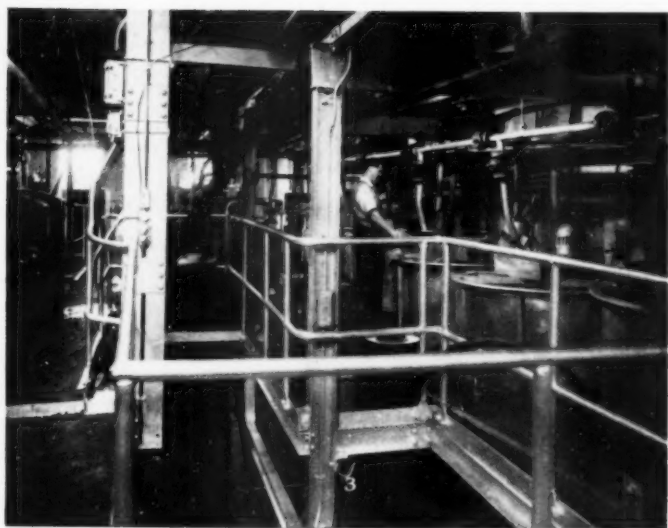
From the start the management were determined to build their executives into a team, each having his own field of responsibility, and not relying for every decision on a superior. Two factors deter-

mined the exact nature of the organization created—the variability of the raw material handled, and the continuous nature of the process which demanded three-shift working.

First, the raw material—bones. Bones vary considerably in chemical composition; those from an Indian cow are different from those of a Pakistani cow. Such variations may affect disastrously the quality of the finished product. "Any fool can make gelatine," says Mr. Egan, the general manager. "The problem is to make successive batches of gelatine of the same quality and consistency."

Treforest Chemical tackled the problem by standardizing practice. Bones from different sources are ground to different sizes and a blend is made in strict conformity with a formula. Variability is reduced by using an average.

The physical processes are similarly standardized. Vast sums,



Treforest Chemical control all their processes in accordance with strict standards.

for instance, have been spent to ensure an even temperature throughout the factory, summer and winter, day and night alike. The treatments that the bones receive are similarly controlled in accordance with strict standards.

Standardization is of little value without inspection and comparison. Treforest Chemical have, of course, the normal works' laboratories with skilled workers engaged on routine tests. But they have gone further, and trained their shift labour to make simple chemical analyses, so that they can draw attention immediately any undue variation occurs. In addition, a number of workers have been trained to use pH meters and similar devices, and appointed as "process checkers"; their sole duty is to walk round the works and make spot checks whenever and wherever they think expedient. They can thus spot any divergence from standard immediately it occurs, and get remedial action taken to prevent the batch from being spoiled.

The second factor shaping the organization is the three-shift system. No one man can be on duty 24 hours a day. But, on the other hand, divided responsibility too often leads to conflict. Treforest Chemical got over the dilemma by appointing a technical works manager, with overall responsibility for production. He keeps normal factory hours, but has no authority to give any orders within

the factory. These are the prerogative of the three shift managers (all of them, incidentally, originally engaged as shift labourers, and trained and promoted within the factory).

The works manager meets the shift managers when they come on duty (their times overlap by half an hour), and tells them what he wants done; it is up to them to decide how it shall be done and see that it is done. Finally, to make doubly sure that there is no cross-shift confusion, each executive keeps his own log book, in which all events and decisions are entered as they occur or are taken.

The general manager assures his own overall control through a daily staff meeting, held in his pri-

vate office and attended by all departmental managers. This meeting is unique in two respects; it lasts only 15 to 20 minutes, and no discussion is permitted. The executives sit round a table, and each in turn produces his log book and reports briefly on his previous day's work. Then he raises any matter on which he wants guidance. If this affects another department, the executive of that department puts his own point of view. If the two are in agreement, a decision is reached immediately. But if there is a difference of opinion between two or more executives, the matter is dropped, and the men concerned are told to meet together later and thrash out an agreed decision to be produced at a subsequent meeting.

"In this way, we make people work together," says the general manager. "If the matter was discussed in conference, all concerned would be weighing their words carefully, because they would know I was listening. When they get together on their own, they have no need to pull their punches. They can get down immediately to the real differences between them, and the need to produce an agreed decision is a strong stimulus to healthy compromise." Apart from saving time, this practice has developed mutual understanding. Clashes between production and engineering departments and between office and factory have been almost eliminated.

The daily staff meeting, too, is

A Meeting Where Discussion is Banned

The general manager of this three-shift working factory exercises over-all control of a highly specialized production process through a daily meeting of departmental heads.

This meeting lasts only from 15 to 20 minutes.

No discussion is permitted.

Should two or more executives disagree, the matter is dropped. They are told to resolve their differences "out of conference" and produce an agreed decision in due course. Time is thus saved, mutual understanding developed.

From these conferences information goes out to foremen and thence to workers. Staff reactions come up through the same channels.

the hub of consultation. Three-shift working makes the establishment of an official works' council or joint production committee difficult, if not impossible. But there is a tremendous amount of unofficial consultation going on all the time. The managers discuss information received at the staff meeting with their foremen, who discuss it with the labourers. And reactions to these discussions come up through the same channels. Any worker, moreover, has the right of access to the general manager at any time. The management are firm believers in the policy of the open door.

The trade unions, too, play an important part in consultation.

Relations are happy, and it is not unknown for the general manager himself to call a trade union meeting to discuss some point in working conditions or wages.

All workers are on hourly rates, the sole exception being those engaged in unloading raw materials, who are paid a bonus on throughput. The fact that a single batch of gelatine takes three months to produce is enough in itself to prevent any application of payment by results.

Office staff work from 8 a.m. to 3 p.m., with a break of only 20 minutes for lunch. This unusual arrangement enables them to have a long unbroken evening at home,

even after a lengthy bus journey, and has proved extremely popular. It is typical, too, of the management's approach to labour relations; traditional attitudes are ruthlessly abandoned if they conflict with either productive efficiency or workers' preferences.

"When everything is said," says this firm, "the ultimate key to success in business is an efficient and happy labour force. And if managers would only give their workers credit for sufficient intelligence, half our labour troubles would be over." The fact that Treforest Chemical have never had a labour dispute in their life suggests that their policy views are not far wrong.

How a Shadow Factory Became Head Works

He Builds Success on Training And Team Spirit



This article in
ONE MINUTE

WHEN Simmonds Aerocorries, Ltd., went to Treforest in November, 1938, they did so not because they wanted to move from their modern and efficient factory on the Great West Road near London, but because the Government had asked them to set up and operate a shadow factory in the area for the production of components needed for rearmament. A small factory was built for them—it now serves as a canteen—and L. G. Oxford, now joint managing director of the company, came down from London with one accountant to take over. A handful of workers was engaged, local men who were completely unfamiliar with engineering or even factory life. Mr. Oxford himself worked on the bench and at the machines, training the men as he went.

Slowly, as the rearmament drive got under way, skilled workers were drafted to the factory from Coventry, Birmingham, London and other centres, and these took over much of the *ad hoc* training of the unskilled local men and women who were being taken on in ever-increasing numbers. Since 1938, 10,000 workers have passed through the factory and 50,000

interviewed for jobs. Today, the labour force is 1,450, of whom 40 per cent. are women; of these 200 have had 14 years' experience and 400 over 10.

And so satisfied were Simmonds with their experience of conditions on the trading estate that in 1942 a completely new factory covering 225,000 sq. ft. with administrative offices, laboratories, surgery and rest rooms, etc., was built. In 1947 the Great West Road factory was closed down and Treforest became head office and the only British factory. Subsidiary factories in South Africa and Australia have since been set up, staffed and managed by Welshmen trained at Treforest.

Although built initially as a production unit for rearmament purposes (Simmonds are playing an important part in the present armament and export programme) the factory now produces components for a variety of engineering industries. This represents a post-war development of no mean order; turnover has been doubled in the space of a few years.

Simmonds are specialists in the design and manufacture of fastening devices, they produce five types of self-locking nuts. Other products

1. Taking over a new factory in a new area, L. G. Oxford trained green labour by working with them at the bench. He then drafted in skilled labour from other areas and handed the training over to them. Now he runs comprehensive training schemes for apprentices, foremen, technicians—and executives.

2. Mr. Oxford also "works in" with the men and women to cultivate team spirit. The joint production committee is a vital affair; "We tell them everything". Workers themselves manage social and welfare activities, and co-operate with management as trustees of a pension fund and in running the canteen. Labour disputes are almost unknown.

3. Forward-looking, too, is the production policy. Products are planned five years ahead. "Unless you are to drop behind, you must find something new".



Labour disputes are almost unknown at Simmonds Aerocessories, Ltd.

are aircraft fuel gauges (electric and electronic), controls, hydraulic, hydrostatic and direct reading contents gauges, oil, fuel and water filters.

They are also an approved test house for the fighting services inspectorates and a Ministry of Supply design approved firm.

If you ask Mr. Oxford the secret of Simmonds' success in South Wales, he will spotlight two factors; training and the cultivation of the team spirit.

Training at Simmonds today is a very different affair from that of the hectic days of 1938 and 1939. Now it starts with a comprehensive apprenticeship training scheme. Applicants for apprenticeships are put through an examination to assess their suitability, and successful candidates, on acceptance, come under an apprenticeship master. Under his guidance, they move stage by stage through a planned schedule of training, with practical work in each department of the factory and training in theory at a local technical college for one day each week. Day visits are made by parties of apprentices to other factories, and exchanges of apprentices with other firms are made for longer periods. An assessment of each apprentice's progress is made at intervals by a committee.

Nor is training limited to apprentices. Considerable attention is paid to the selection and training of foremen. The foremen have their own representative on the Joint Production Committee, and

a quarterly meeting of their own, at which problems affecting them can be thrashed out. Regular visits are also paid by foremen to other firms' factories, to enable them to broaden their outlook.

Senior technicians and executives, too, are not neglected; they are encouraged to keep in touch with development affecting their work in any field. Many of them go abroad; at least one management representative and one technician visit the United States each year to learn what they can of recent developments over there.

The technical work involved is of a high calibre, for Simmonds design and manufacture special-

purpose machines for their own use on a considerable scale. There is, too, a strong research and development section concentrating on thinking up new products for future introduction. This section is constantly working on plans for products to be introduced five years ahead. "You can hope to keep the lead on a new product for five years," says Mr. Oxford. "Then, unless you are content to drop behind, you must find something new."

The cultivation of a team spirit cannot be accomplished overnight; it is the result of long and patient effort by management. "Welsh people cannot be driven," says Mr. Oxford; "you must work in with them." Keypoint of co-operation at Treforest is the joint production committee. In pattern, it followed the normal J.P.C. structure—but at Simmonds it is taken seriously by all concerned. Mr. Oxford himself is chairman, with a member of the labour and welfare department as secretary. One innovation is a member specifically representing ex-Servicemen employed by the company.

Routine meetings of the J.P.C. are kept fully informed of all developments that affect the running of the firm: "We tell them everything," Mr. Oxford insists. Any innovation proposed is discussed in detail by the J.P.C. before it is put into practice, and, on occasion, modified or even shelved completely as a result. All minutes are divided by agreement into two sections, one of which is pinned up on notice boards throughout the factory. The other consists mainly of unfinished business—there is very little that is not eventually published.

In addition to routine business, the J.P.C. also hears at regular intervals addresses by senior officials of the company, outlining the functions and problems of their departments. It thus becomes yet another medium for the all-pervasive training in management.

Many other committees, consisting of the workers themselves, run the various social and welfare organizations within the firm. There are active social and sports clubs, a holiday savings fund (£8,000 was saved this year), a charity fund supported by voluntary deductions from wages, and a

HOME . . .

Welshmen who left the valleys in the bad days of depression are returning home to work at Simmonds. They have heard from relatives of the new conditions in the homeland.

. . . AWAY

After seven years' consolidation Simmonds turned their Treforest shadow factory into their head office and only British works. Subsidiary factories have since been set up in South Africa and Australia—staffed and managed by Welshmen trained at the Treforest factory.

sickness benefit fund. The company provides the necessary facilities for these organizations, but takes no part in their management.

On the financial side, all workers are paid standard basic trade union rates, and there is a special branch within the firm of each union concerned. In addition, workers receive a time bonus for efficient work, with *ex gratia* payments for any particular meritorious piece of work. In a few cases, a group bonus is paid, and there is a special bonus made to "non-productive" workers based on the effort of the factory as a whole. A pension fund is run by the company itself, with workers acting with management representatives as honorary trustees. The canteen is run and subsidized by the company, in conjunction with a sub-committee of the J.P.C. First aid posts are in charge of a State Registered Nurse, and a doctor visits the factory for consultations twice a week.

Under these circumstances, it is little wonder that Simmonds have been practically free of any labour dispute since they first opened their factory. But perhaps the best testimony to the way in which they have managed to gain the confidence of their workers is the fact that an increasing number of these workers are Welshmen who left the valleys during the bad days of the depression and are now returning to their homeland permanently as a result of what they have seen on brief visits to the relatives they left behind.



L. G. Oxford, joint managing director, Simmonds Aerocessories, Ltd.



This article in
ONE MINUTE

FROM London to Wales. From skilled craftsmen to green labour. From peaceful normality to war's emergency.

THE first chapter in this story deals with production. How, step-by-step, makers of scientific glassware changed the whole basis of manufacture from one of specialized craftsmanship to one of mass production. The factory became the largest of its kind in Britain.

CHAPTER Two turns from war to peace, from production to selling. It tells how new and larger markets were developed at home and abroad. And once again the problem was tackled—and solved—step by step.

"THE finest thing we ever did" is the managing director's comment on the move from London to Wales.

From Handmade Goods to Mass Production

How Step-by-Step Action Won Wartime Output and Peacetime Sales

IN 1914-1918, this country experienced extreme difficulty in satisfying demands for glass apparatus, since 99.9 per cent. of it had been imported from Germany.

H. J. Elliott was the first man to set out, prior to the commencement of the great war, to produce volumetric laboratory glassware in this country, despite the fact that Germany's glass industry had been established a great many years.

After 1918 competition from the Continent once more became serious, particularly since foreign manufacturers were receiving subsidies from their governments to enable them to ship supplies into this country at very low prices.

It was not until 1926 that our government officially recognized this work as a key industry, and at the same time imposed an import duty on all foreign graduated glassware.

The company, then located in London, had continued to expand in spite of this competition. In 1939, H. J. Elliott's son, S. H. Elliott, now managing director, saw history about to repeat itself. The government was convinced of the danger and offered to build a new factory at Treforest to enable output to be expanded.

Now, however, came the problem that was very prevalent at this time with all companies who, by force of circumstances, were having to change their location—labour. The London factory was not large, but it depended on craftsmen whose skill had been built up slowly over a long period.

To move them to Wales was impossible—there were no houses available. To train local Welsh workers in their skills was equally impossible—it would take far too long. If the move to Treforest

was to succeed, the whole basis of manufacture must be changed; and industry based on specialized craftsmanship must be converted into a mass production industry, based on the breaking down of operations and a high degree of mechanization.

The decision taken, the problem was broken down into five stages:

First. A break-down of each piece of apparatus into logical operations, from the arrival of the glass to the dispatch of the finished product.

Second. These processes were then broken down into simple elements, each of which could be learned and carried out by unskilled men or women. Many elements, too, could be handled by a machine. So machines were designed.

Third. The separation of elements brought problems of movement. Under the old regime one man undertook the whole process, and the movement of materials was limited. With a dozen or more workers engaged on the apparatus, it was necessary to plan the flow of materials so that the movement was restricted to a minimum. So a factory layout was planned to secure an orderly flow of materials. Only then was the building of the factory discussed. The estate architects built the factory round the layout. Result: a well-planned factory, with all the facilities where they were required.

Fourth. Training. In August, 1940, Mr. Elliott, senr., moved in and started a training school with six key workers. The school rapidly grew, and, as more and more workers passed through it, so did the factory. Soon there were over 250 workers, about 40 per cent. of them women and 25 per cent. disabled men, ex-miners suffering from silicosis and pneumoconiosis.

Fifth. These workers, most of whom had never worked in a factory before, had to be welded into a cohesive production team. Every job has been studied by time and motion study experts, and a comprehensive bonus scheme created on the basis of the standard times determined. Only in one or two departments, such as packaging and degreasing, where special care is involved, does the individual bonus give way to a group bonus.

Senior management also have their own incentives. Twenty-

PROBLEM No. 1.—Wartime Output

Makers of scientific glassware converted an industry based on specialized craftsmanship into one of mass production techniques by—

1. Charting every stage in the original production process.
2. Breaking down each stage into simple elements which could be carried out by unskilled labour or by machine.
3. Planning a factory layout to give an orderly flow of materials, with the minimum of movement.
4. Training green labour to perform the simplified production techniques.
5. Welding this new labour into a team by scientific management.

PROBLEM No. 2.—Peacetime Selling

With vastly increased output and facing intense competition, the firm won more sales at home and abroad by—

1. Improving the design of old products.
2. Introducing products embodying new materials.
3. Packaging products in individual packs.
4. Branding all products and registering a trade-mark.
5. Publicising the trade-mark by advertising.
6. Building up foreign contacts by overseas visits by the managing director himself and top sales executives.
7. Applying in the factory a system of management, including budgetary control and delegation of responsibility, which frees the managing director for top-level planning and selling overseas.

two senior executives share in the firm's net profit.

Welfare arrangements have not been neglected, and there is a very active sports and social club. A canteen is run by an outside catering firm, with premises, equipment and services provided by the firm, but without any cash subsidy.

The Treforest factory is now the largest of its type in Britain.

Peace brought its own headaches. In 1940 the problem had been production. In 1945 it was selling. The company now had to find civilian customers for an output many times the size of the pre-war production. Other firms were in a similar position, and preparations were made to meet intensive competition. As before, the problem was tackled by stages.

First. The company set about establishing the identity of their

products. Scientific glassware is sold through laboratory furnishers, who act as factors. Most products—flasks, burettes, pipettes, etc.—are of standard pattern, so that the ultimate consumer, the laboratory technician, had no method of differentiating between the products of one firm and another. The manufacturer thus depended on the goodwill of the factor, rather than on that of the customer. On the home market such an arrangement worked reasonably well; on the export market it was a definite handicap. And so, with a shrewd eye on the export market, the company started branding their products.

This, again, was achieved by stages. To begin with, improvements in design were engineered. A plastic flask stopper that did not "seize" in the way that some glass

stoppers tend to do was introduced. To increase legibility, green or gold for graduations, in place of the standard black or white, were used. Finally, packaging the products in individual packs—an innovation for the industry.

Second. Having established the identity of the product, the company's trade mark was registered in over twenty other countries, and branded on all proprietary apparatus manufactured. Such a move was contemplated in the "thirties," but it had not been finalized.

Third. The new brand name was advertised, both by direct mail and in the technical press. Technicians were asked to specify *E-Mil* products when ordering from furnishers. The status and terms of trade of the furnishers remained unchanged, but more and more of their customers started ordering *E-Mil* apparatus, rather than just apparatus.

Fourth. They had to undertake the search for new export markets. Here, too, the trade mark was of value.

Pre-war contacts, though limited in number, formed the hard core of the post-war export drive. An intensive programme of overseas visits by S. H. Elliott and his sales executive added to their number. Since 1945 he himself has paid three visits to Canada (where he found severe American competition), and one or more to Scandinavia, Finland, India, Paki-

stan, Portugal, Switzerland, Belgium and Holland.

The task has been to find *bona fide* laboratory furnishers in the territory and to convince them of the merits of his goods. For both these tasks, he relies heavily on personal contacts. "You can tell a man more about your products in an hour more effectively," he asserts, "than from protracted correspondence and supporting literature and catalogues." And, he would add, you can learn more about his calibre as an agent from personal contact than from a hundred references or recommendations. That such methods pay can be seen from the steadily rising export figures.

Finally. Management. Foreign visits, though essential, can play havoc at home. Only a well-managed business can spare its top executive for weeks at a time. That Mr. Elliott can be spared he puts down to the system of monthly budgetary control, based on standard costs, introduced in 1943. A budget for each department and a general policy line are thrashed out in advance at a meeting between him and the departmental managers. Within the limits of these, each manager is free to make his own decisions in detail. The system not only gives Mr. Elliott and his board a firm financial control over the whole business, but, by securing adequate delegation of responsi-

Continued on page 121

An Exile Returns to Wales



D. JOHN WILLIAMS, founder and managing director of Butter Candies (Treforest) Ltd., is one of the few Welsh employers on the Treforest Trading Estate.

His family for several generations had been connected with coal mining in the Welsh valleys, but the depression which hit Wales in 1926 changed all that.

In the period between the depression and the launching of this highly successful experiment of establishing light industries in the area, Mr. Williams broadened his accounting experience, and was associated for some years with the Burroughs Adding Machine, Ltd.—"an amazingly happy experience, and a first-rate training in management. If I had a son I should put him with one of the big office equipment firms for a few years, before he set up for himself."

His confectionery factory was officially opened by Lady Megan Lloyd George in May, 1939. Though the war nearly finished his venture, he today claims that his factory is one of the most highly mechanized of its size in the country.

Since 1946, Mr. Williams has been concentrating on exports as this enables him to expand his business, through the replacement of raw materials, sugar, etc., which can only be obtained on his export products. It has not been easy. The resources of Butter Candies, employing only 40 people, do not run to extensive personal travel abroad.

Nevertheless, sales have been made to London export agents, to overseas buyers visiting this country, and through British firms with international ramifications whose products did not include sweets.

Today Mr. Williams is casting eyes at the American scene. The dollar market, he confesses, is not going to be easy. It means tying up capital. Major changes in production and packaging techniques would probably be necessary.



H. J. Elliott made mass production of scientific glassware possible.

BUSINESS

surveys the Development Areas :

Brian Cummings reports on

WEST CUMBERLAND

FROM an insured population of 15,000 (including 200 women) to one of 64,000 (14,000 women). From an unemployment rate of 50 per cent. (87 per cent. in one area) to one of less than five per cent.

SUCH are the contrasts in West Cumberland. Between the wars coal and iron ore mines and blast furnaces closed down one after another. Wholesale transfer of the population seemed inevitable.

TODAY scores of varied industries flourish, many new to this country.

New factories cover hundreds of thousands of square feet.

THERE are no large estates, such as those described elsewhere in this issue. Work has been taken to the workers; small estates and group sites stretch from north to south for 90 miles.

ON this and the following nine pages are five success stories, selected from a wealth of material and illustrative of the vigour and flexibility characteristic of this new-born area.

A "Be Prepared" Policy Pays Good Dividends

How Five New By-Products Forestalled a Buyers' Market

To keep your eggs in one basket is particularly tempting in a sellers' market. But the managing director of Hornflowa, Ltd., though his firm and his products were doing well, anticipated the buyers' market. So he diversified his business in five main ways. To plastic buttons he added flooring tiles, fertilizers, moulding powder and resins and he entered the specialized fields of engineering and plastics moulding. With each he was successful. Here is the story of a man who knows what he wants and how to get it.

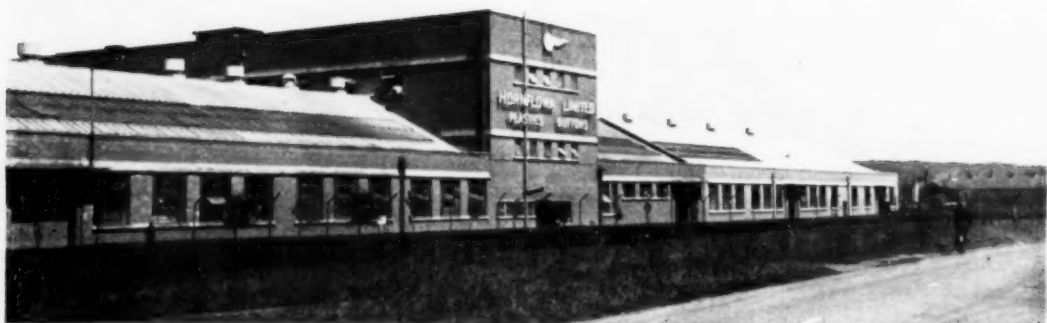
NEW men, new industries. A new man in Cumberland is Dr. F. M. Herzberg, 65-years-old engineer and banker. New to Cumberland is the manufacture of buttons, which is Dr. Herzberg's present interest. Still new to most industrialists is the technique by which the buttons are made. For these are plastic buttons of a beauty, translucency and hardness unequalled by the horn buttons which they set out to portray.

The story begins with the development in Czechoslovakia of a remarkable process for grinding down clean, dry, cattle hooves, pressing the hoofmeal, and hardening the pressed buttons in a formaldehyde bath. Buttons produced in this way were bright, hard and durable. They resisted heat and chemicals, and could be produced in huge numbers and a wide range of attractive colours and designs.

The process was brought to Britain and taken up by Dr. Herzberg. Hornflowa, Ltd., was formed as a private company at Maryport, Cumberland, and Dr. Herzberg became managing director. His aim was to produce buttons for high-class trade. That meant full control over all materials and manufacturing processes to ensure absolute consistency of shade, colour and translucency—in other words, complete quality control.

From 1939 to 1942 the company occupied a small, standard type of factory. Compelled to produce Service buttons and a restricted range for civilian clothing, they never forgot their real purpose. They found time to elaborate and improve the Czechoslovakian process, and even to plan, and move into, a new factory built to their design by the Development Company.

By 1949, Hornflowa, Ltd., were



Built to Hornflowa's own design, this factory overlooks the company's original plant.

producing three main types of button: plain buttons, mottled buttons sprayed on one side only, and de luxe buttons, whose design was carried right through by controlled mixtures of different coloured moulding powders. De luxe buttons combined the best of the old and new worlds; they had the same effect in depth as natural horn buttons, while the use of plastic materials widened the colour range to almost limitless possibilities. From now on, it was a question of producing more and more designs without losing the original concept of mass production.

With so many variations on a mass-produced article, it was essential to have an efficient production control system. This operates as follows: a crimped prong represents one order of one size in one colour. Coloured backing cards give order numbers and quantities for different types of production. On the prong are hung lettered plastic discs, each representing a stage of manufacture. As manufacture progresses and batches pass through the factory the presence and quantity in gross of these batches are indicated by plastic tags hung next to the relevant departmental disc. Where a firm delivery date has to be kept or other considerations demand that the order should be clear of a certain portion of the factory by a given date, these are indicated by tags also hung behind the departmental disc. Other facts

regarding delivery, export, etc., are indicated by further signals on the prongs.

In the immediate post-war years the company were producing no fewer than one and a quarter million buttons a day. There was a pent-up demand to satisfy. But Hornflowa saw that demand must slacken, and had the vision to plan diversification of the business. This has been carried out in five ways.

First, it was decided to set up a fairly large tool room to design and build much of the machinery and tools needed for large-scale

button production. Once equipped, this department had to be fully occupied if it were to pay its way. The company, therefore, offered their services to other organizations needing precision operations for the manufacture of plastics compression and injection moulds, pressure die-castings dies for zinc and aluminium, forging dies of small and medium sizes, and jigs and tools for general production work.

The work of this department now represents a substantial portion of the business. It pays a healthy dividend.



Hornflowa technicians devised and installed their own vacuum tubes for cleaning press tools.



Managing director of Hornflowa is Dr. F. M. Herzberg.

Secondly, injection moulding facilities were added so that the firm could offer their services as custom moulders to the toy and fancy goods trades. (To produce their own proprietary articles would have meant setting up a large selling organization.) A battery of 13 modern injection moulding machines was installed, and in three years this side of the business has grown to represent 25 per cent. of total turnover.

Thirdly, the synthetic resin and moulding powder plant was expanded, and the company put their specialized moulding pow-

ders on the open market at home and abroad. This development has been more than enough to take up the slack occasioned by the fall in demand for buttons. New plant is going in with a production target of 350 tons of powder a year.

Fourthly comes a development still in its infancy—the manufacture of PVC flooring tiles. These tiles have a resilient base and a surface capable of taking an almost infinite amount of wear. They are being sold for private houses, shops, business premises, hospitals, hotels and factories. Production is at the rate of 50,000 square yards per annum, a figure that will probably be improved in the near future.

Fifth, and last of the "by-product" activities, is the production of fertilizers made from hoof meal. To cope with demand for this material, an extension of the factory was needed. Here again managerial foresight was justified. Despite the fact that the new factory was much larger than the first, land had been left for further extensions. The space needed for production of fertilizers created no problem; still more building could be undertaken.

Why such success? The answer lies in the personality of the managing director, the capability of the management team, the structure within which they work, the adaptability of the Cumbrian labour force, and the helping hand of the Development Company. Dr. Herzberg has many qualifications.

Much of the equipment in the Hornflowa factory is designed and built on the premises.



5 Management Councils Get Results

The managing director of Hornflowa, Ltd., has a clear-cut managerial policy. He achieves his aims through five councils:—

1. Policy Committee—quarterly.
2. Technical Committee—weekly.
3. Colour Council—weekly.
4. Chemical Council—monthly.
5. Elected Works Council—quarterly.

In practice, as well as in theory, he consults the men who do the job without removing executive responsibility from individuals.

A trained engineer, he speaks to a technician in his own language. A banker, he knows general economics, as well as company finance.

Managerially, he knows what he wants and the way to get it. He uses five committees to achieve his aims:—

1. *Policy committee.* This meets quarterly under his chairmanship, and consists of the heads of departments and top supervisors. This is the means by which directorial policy is transmitted to the factory. There are also discussions on economy, efficiency and development.

2. *Technical committee.* This meets every week and consists of the heads of departments and the specialists, i.e., the chief designer, research chemist, resident technical adviser, and some of the more senior foremen. This committee deals with day-to-day technical problems, checks programmes, and sees to the implementation of new ideas.

3. *Colour council* of chemists, colourists and sales staff. Business includes new designs, customers' special requirements and complaints. The council meets once a week.

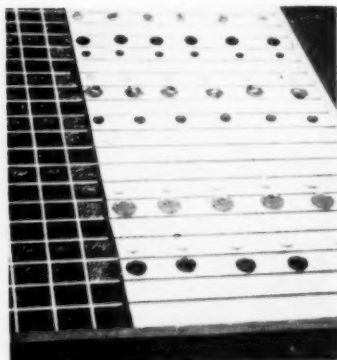
4. *Chemical council* keeps a sharp look-out for new developments in moulding powders, resins and other materials used in the factory. It considers possibilities for future development, such as adhesives, new resins and core binders.

5. *Elected works council.* This

meets quarterly. Sub-committees of the council are responsible for sports and social events, the canteen, the works' magazine, safety, suggestions, charities and savings. They even run a library, which provides works of reference and fiction.

Dr. Herzberg's managerial policy is therefore clear: to consult with the people who do the job without removing executive responsibility from individuals. His attitude to labour is the same. There is full trade union recognition and negotiation.

Such is the company that have created and supplied a quality market for a new type of button. They have added flooring tiles, fertilizers, moulding powder and resins to their list of products, and have entered specialized fields of engineering and plastics moulding.



These production boards are divided into sections for master buttons, for batch masters and for production samples. The master buttons themselves are used to ensure matching between batches of the same colour produced at different times. The batch masters are the representative sample from each batch, when checked for colour by the laboratory before release for production. The production samples are selected at random every half-hour or so as representative of production from the presses. Production boards are sited as near as possible to a north light and are equipped with special lamps so that where matching has to be done other than in daylight, the best possible results can be obtained. Adjustments to pressing conditions are carried out or moulding powders are rejected according to the results from production and to no other criterion.

Training - Welfare - Equipment

Here's a Three-Point Programme for Success in Management



This article in
ONE MINUTE

A FACTORY built for the job it has to do; methods of training that hold a balance between traditional and modern conceptions of technical education; welfare facilities that include pensions for staff and foremen, flats for key workers, and a first-rate canteen—these are the management policies which have brought success and credit to the Cumberland Cloth Co., Ltd., a subsidiary of John Crowther and Sons, Ltd. of Huddersfield.

First man to set foot in Cumberland on behalf of Crowther's was F. M. Crawshaw, who built the new factory at Workington within sight of St. Helen's Colliery—a nice juxtaposition of the old and the new. Mr. Crawshaw—who has been through all the departments at Crowther's, and holds the City and Guilds certificates for weaving and woollen and worsted spinning—became manager of the Cumberland factory, and was later made M.B.E. for his work in the Development Area.

His first problem was to find and train a labour force. Ingenuity and resource provided a solution. While the factory was being built, an old foundry was taken over and machinery was installed for the instruction of the new recruits. Skilled workers were brought in from Huddersfield and other textile centres to explain the mysteries of teasing, carding, spinning, weaving and mending. By the time the new factory was complete, a nucleus of about 50 skilled and semi-skilled workers was ready to move in. The factory was soon in production, and more new labour was introduced.

Both in the foundry and the factory, a balance was maintained between old and new methods of training. The old idea was to put a new worker straight into the production line and hope that she would learn by watching her next-

Textile production normally follows traditional paths. But tradition was only of limited value to a company starting cloth production in a new area with labour that was unskilled in textiles.

This firm combined the old and the new in a three-point management programme:—

1. **TRAINING:** Instead of learning by trial and error in the production line, new labour was taught by skilled workers from Yorkshire. Informal methods were used, including slow-motion demonstrations.
2. **WELFARE:** Faith in the firm and satisfaction with their job were developed by enlightened welfare facilities. These included staff pensions, flats for key workers, a first-rate canteen.
3. **EQUIPMENT:** Modern equipment was installed in a new factory planned for flow production. Built on one level, the factory itself incorporates several novel features all of which are conducive to efficiency.

door neighbour. Learning by trial and error was too risky in Cumberland, however, where there is nothing comparable to the Yorkshire tradition and inheritance of skill and understanding in textile operations. Hence the necessity for the foundry; hence also the "instructors."

Despite a tendency in the woollen industry towards teaching operators in schools, Cumberland

Cloth kept their methods informal. Instead of setting up a classroom, the management placed newcomers in the charge of men and girls who had been selected for their ability to teach, as well as their experience in the trade. Skilled foremen from Yorkshire trained the more promising local people as foremen and assistant foremen. All were encouraged to regard training as an essential part of the job.

On one occasion the management issued a duplicated extract from F. J. Burns Morton's book, "Teamwork in Industry," in which the author described some of the methods by which foremen can train operatives without formal schooling. These include analysis of the job, inducing a frame of mind for learning, slow-motion demonstrations with full explanations,

and practical applications. Further efforts at encouraging foremen to adopt these ideas were made by Mr. Crawshaw and his assistant, who attended—quite unnecessarily, from their own point of view—classes in foremanship at Workington Technical College.

All in all, these methods proved highly effective. In two years the original task force of 50 grew to a complement of 300. Since then, numbers have increased still further. The present figure is 450; in particularly busy times as many as 570 have been employed. It goes without saying that expansion of this order would be impossible without the consolidation of skills. Cumberland cloth is produced for a quality market, and must be faultless if it is to meet the requirements of the parent company and the ultimate consumer.

Unlike the old type of woollen mill, the factory at Cumberland is organized on flow lines—a feature which is made possible by the single-storey arrangement of the building. The factory is made of brick and steel (to reduce the risk of fire), and includes several novel features. For example, goods inward and dispatch doors were built to the same height as the lowest bridges in the neighbourhood so that lorries and trailers could be loaded to the limits. New methods were employed in the construction of the roof to avoid the use of cross-members on the inside, and enable maintenance to be carried on outside without the use of cat-ladders. The elimination of cross-members also avoids the col-

Continued on page 122

Getting the Correct Angle on Output and Sales

How to Win Acceptance for a New, Unusual Product

A FIRM that have converted large numbers of British men and women to wearing a Continental type of headgear must obviously be responsible for a classic in salesmanship. But first the product must be right, so Kangol Wear, Ltd., makers of the well-known berets of that name, concentrated on the product and the means by which it is made.

In the years immediately following the first World War, Jacques Spreiregen was an importer, wholesaler and exporter of Basque berets. Business was good, but not good enough. He saw possibilities in berets that no one else imagined. To the Englishman berets were natural headgear for very little boys, somewhat larger girls, adult hikers, and, traditionally, for the provincial Spanish and French. Most berets were made on the Continent anyway, and could be kept at a safe distance.

Spreiregen had other ideas. He saw the beret in two additional roles: first, as a highly practical headgear that would appeal to

sportsmen and also be acceptable to the Services; secondly, as a fashion accessory to delight the hearts of well-dressed women.

To achieve all this required full control of design and production. On 17th July, 1934, Spreiregen bought for £50 the company now known as Kangol Wear, Ltd. Eighteen years later, to the very day, Kangol, Ltd., offered shares on the Stock Exchange, the prospectus quoting an authorized capital of £200,000, of which £150,000 had been issued and fully paid.

Shortly after founding his company Spreiregen took over the lease of Cleator Mills, which had just been renovated by the West Cumberland Development Co., under the able management of Lord Adams (then Jack Adams). Helped by the Nuffield Trust, he also purchased a French beret-making factory and brought the plant to England. Next, he introduced a number of skilled Basques to teach local people the art of beret-making. Finally, one or two specialists were brought in from



This article in
ONE MINUTE

An importer turned manufacturer. A big business built with little capital. Green labour trained to skilled work. Such is the theme of this and several other articles in this issue of "BUSINESS".

Two additional factors, however, distinguish this case-history. First, the product itself. Secondly, the way it was "put across".

The product is a beret—a "foreign" idea, not immediately guaranteed to appeal to the conservative British. To make the idea acceptable, the founder of Kangol Wear, Ltd., decided that the product itself must first be right. So everything was concentrated on designing and producing a quality article.

Sales policy was equally clear-sighted: to sell berets as practical headgear and as a fashion accessory. In both markets success has been won. A feature of all advertising, publicity literature and sales aids has been the consistency of design and message.



Kangol berets keep in step with fashion. This is Muffin, designed to go with short hair styles.



Fashion in the making. This picture shows the beret as it comes from the knitting machine.

Leicester to look after the linking machines and train operatives. Altogether there are now 400 workers in the Cumberland factory.

Artist . . .

Spreiregen is an artist (his office contains some of the classics of French painting); he insists on quality. He is a craftsman—and, given half a chance, he will take his coat off and do the job himself. He is a shrewd businessman who knows the virtue of ploughing back profits; the factory in Cumberland is notable for the amount and quality of new machinery installed. Many thousands of pounds have been spent on new machines, most of which were designed and patented by the company's own technicians. The very manufacture of beret-making machinery has been brought from France to England, and premises have been acquired in Leicester for production of the machines under Kangol's own name.

Managerially, the aim is simple: to create an organization that will run itself to the appropriate standards without the constant supervision of Mr. Spreiregen himself. In achieving this, he has two chief lieutenants: Joseph Meisner, joint managing director and technical chief, and Edward Fooks, the director responsible for accountancy and finance. There is also the secretary of Kangol Wear, Ltd., E. A. Jordan, to whom many on-the-spot problems in general management are referred. Mr. Jordan showed his own versatility in a tour of the factory.

In one remarkable year of their history, Cleator Mills turned out no fewer than one million berets for the Armed Forces. Now production is nearing five million berets a year. How are they sold? The bare facts are that Kangol supply the home market through wholesalers, and the rest of the world (divided into 36 separate markets) through agents. Foreign sales are also constantly stimulated by the frequent trips abroad of certain top executives. One of these visits resulted in the appre-



Jacques Spreiregen. He spent £50 in 1934; now his company has an authorized capital of £200,000.

Right, Joseph Meisner, joint managing director and technical chief. Berets are his business.



Large numbers of berets have leather headbands. In this picture a band is being put on with a sewing machine.



An early operation is shearing, which smooths down the roughness caused by teasing operations.

ciation of a whole new range of possibilities—the production of fezzes for the Moslem countries. A prototype machine has been put on trial for this purpose.

Most striking feature of the sales policy, however, is the range of Press advertisements, brochures, colour ranges, and aids for retailers, which supplement the salesmanship of individual personalities inside the company and among the wholesalers. In all of these there is one outstanding fea-

ture—consistency of design and message. Every item of stationery, literature and advertising makes some use of the Kangol slogan, "Correct from every angle," the designs for which are the work of one of the top artists in advertising—Ashley Havinden, of Crawfords. Every mailing piece, display stand, and tube card carries some variation of the slogan. Here are some of them:

"Correct from every angle" (a pamphlet for outdoor men); "Chic from every angle" (a Press advertisement for women); "Display from a new angle" (a brochure for wholesalers); "From the sporting angle" (a Press advertisement exploiting the adoption of Kangol berets by the British Olympic teams of 1948 and 1952).

Most of the display stands for distribution by wholesalers to retailers are made of metal rods which cross each other diagonally and finish in circular "plates," on which the berets are displayed. Even an easel for display of enlarged photographs from *Vogue* features diagonals. The angle ap-

pears yet again in the most spectacular item of all—the backdrops supplied on request for retailers' special displays.

... and Publicist

Minute-by-minute news of Kangol developments is handled by editorial publicity, the chief aim of which is to promote the berets as fashion products. Hand-outs and photographs are supplied to the trade Press and fashion magazines whenever new lines are introduced, or on request from fashion editors. Berets are quickly made available to models, photographers and magazines.

Results speak for themselves. Kangol berets have been featured in *Fashions and Fabrics*, *Harper's Bazaar*, *The Queen*, *Housewife*, *Woman's Own*, *Vogue*, *Vanity Fair* and many national and provincial papers. They have been worn by famous athletes and featured by Digby Morton. Their pertness and swagger appeal to many men and women. Their name is a household word.



This Firm Get the Best from Their Workers

How to Build Success on the Family Spirit



This article in
ONE MINUTE

Technical proficiency at the top is essential for production and sales. Plant and equipment must be of a high order. But men, not machines, are the real key to success in industry.

In this Cumberland factory great stress is placed on the human factor. The management regard their workers as members of a family and do much to make them so.

But the workers are left in no doubt that they too must do their bit. They are given every help to do so.

THERE is an informality about West Coast Tanneries, Ltd., which runs right through the management organization and affects their attitude to staff and workers. Managerially, the organization is simple and straightforward. Andrew Vigodny is chairman, managing director and technical chief. B. Herdan is responsible for sales. J. C. Emmett, secretary of the company, controls staff in the stores, as well as the office; his assistant is first lieutenant to Mr. Herdan, as well as head of the wages department.

Features of the labour relations policy include trade union recognition, but no formal consultation, superannuation, payment for ideas, and a foremen's bonus scheme. There is a house journal, a particularly sensible works handbook, and an apprenticeship scheme that includes a £200 a year



Andrew Vigodny, Chairman.

scholarship to Leeds University. There is also a virile sports club.

Three factors attracted the company to settle in Cumberland: the softness of the water; the nearness of the sea, which enabled the works to dispose of its effluent; and the quality of the labour. The last-named factor alone has been more than sufficient compensation for the one disadvantage of location in Cumberland—the distance from the shoe centres.

The foundation-stone was laid in 1937, and hides were put into process in the late autumn of 1933. Work began in one half of the factory while the roof was being put on the other, and the first pack of finished leather was on the sorting table on the 1st. February, 1939. By the time war broke out, the company had established a useful home market for quality chrome upper leathers, most of them in calf.

Though war had the usual disrupting effect, valuable experience was gained. On one occasion, for example, West Coast Tanneries pooled their knowledge with others in the trade, and produced a new type of leather for use in the Far East. Previous leathers had rotted in a few days of jungle warfare.

Technically, the company are progressive. Laboratory tests ensure quality control; new machines are constantly installed to speed up and improve on the results obtained by traditional methods.

Pride in their work and confidence in their methods show in the conducted tours which are a feature of the company's public relations policy. Hundreds of people have been round the tannery—buying and selling agents for shoe manufacturers, shop managers, members of the Forces on educational visits, and local school children whose curriculum includes a study of neighbouring industries. The firm appear regularly at trade fairs at home and abroad, and loyally support local exhibitions. The shoe and leather fairs in London and Offenbach are their natural shop windows, but they do not scorn the smaller type of event.

Internal relations are nicely balanced. You catch the spirit from the works handbook, which opens with a welcome from the chairman, and then introduces the two executive directors and explains their responsibilities. Next comes a list of executives, a verbal tour of the factory, and an account of the origin of the company. The handbook finishes with a challenging statement of policy, from which the following quotation is given:—

"The Management of this factory regards those who work here as members of a family, not just numbers passing in and out of a gate . . . But the privilege of belonging to our family demands an obligation on your part. Plainly it means that you

Continued on page 122



B. Herdan, responsible for sales.

How a New Industry Gave Britain a World Lead



This article in
ONE MINUTE



De Gara takes a call while Sekers (white coat) confers.

DESIGNER, technician and salesman, Miki Sekers still makes no claim to being a businessman. Tommy de Gara does all the organizing. But work? Sekers often works from 7 in the morning until 2 o'clock the next morning. Joint consultation? Meetings are held on the floor of Sekers' studio. Salesmanship? Sekers' customers include such famous fashion designers as Hardy Amies, Lachasse, Worth and Frederick Starke; Adele Simpson, Vera Maxwell and Marusia; Dior, Schiaparelli, Balenciaga, Castillo, Desses, Fath, Patou and Paquin—and he travels between 40,000 and 50,000 miles every year in order to reach them.

Sekers and de Gara are partners in West Cumberland Silk Mills, Ltd., a firm that have brought a new industry to Britain and employment to the Lake District. Their products are silks, satins, brocades, and some particularly unusual designs in rayon and

nylon fabrics. These materials and many others are used by couturiers and other designers. They help to create fashion. And they belong to a highly competitive industry.

"Debts to Father..."

Miki Sekers is an Hungarian, born of an old silk-weaving family. He came to this country just before the last war with little more than his native wit and training plus "a car, furniture, a flat, debts to father and debts to mother." It was the winter of 1937, and he and de Gara were supposed to be going on holiday in Switzerland. Instead, they went to Cumberland and set up in business.

Money was raised and an air-conditioned factory was built on a site ideally situated for temperature and humidity. Cumberland provided the workers and de

Fashion fabrics have a short life. Dress designers constantly call for something new in materials and designs.

Miki Sekers is by temperament ideally suited to an arduous and highly competitive industry. He lives for his craft, and the fabrics produced by his firm have given Britain a world lead. His customers include many internationally famous couturiers.

Nor did he take the easy way out. For he and his partner went to Cumberland and taught a completely strange craft to the local labour, many of them wives and daughters of miners.

Gara trained them. It was a completely strange craft, this weaving of silk and other delicate materials, but the Cumbrians learned it by an amazing concentration. Most of them were women—the wives and daughters of miners—but they knew the extremes of unemployment. They also knew the meaning of loyalty. To this day every single member of the original team, which also includes Hungarians, Poles, Czechs and Germans, is still working for Sekers.

The war would have wrecked everything but for nylon parachutes, which were ordered in large quantities. Experience gained in this work proved useful. In 1945 Sekers introduced the first crinkled nylons, which were an instant success all over the world. Some of these nylons were made in conjunction with viscose crepe, a combination that enabled the skin to "breathe."

From 1945 to the present day



"See how it works?" The skill of an Hungarian takes root in Cumberland.

Something accomplished. Sekers relaxes with his personal assistant while building continues outside.

Sekers has never stopped introducing new materials. He has to keep up the flow, for the life of a fashion fabric is only six months; after that the mill must fight again for leadership over competitors. As one writer put it: "Always the dress designers are calling for something new, for silks that look like wool, wool that handles like silk, and cottons that look like anything in the world."

Frequently inspired by the more romantic painters (his dark silks recall Velasquez and Goya, and his pale ones Gainsborough), Sekers generally brought out something really new. The names of these fabrics betray their designer's shrewd eye for sales appeal: *Duchesse*, *Dogana*, *Mille et Deuxieme Nuit*, *Rose Dentelle*, *Epaulette*, *Romantique*, *Fortuna*, *Così Fan Tutti*, *Frou Frou*, *Park Lane*, *Portia*, *Papageno*, *Momi*.

Sekers' personal visits to couturiers are backed by a London office which is visited every season by the makers-up. Here are salesmen, display men and secretaries whose job it is to keep the place attractive and provide window displays and set pieces for stores. Overseas markets are attended by similar offices in Paris, New York, Sydney and Auckland. Then there



is "promotion," that mysterious agency which ensures that Sekers' fabrics are worn at the right time and in the right place by the right people.

In 1951 the then President of the Board of Trade opened an exhibition of 50 nylon dress fabrics, all woven by West Cumberland Silk Mills. For the first time in the history of the nylon industry, dresses, blouses and lingerie made of British nylon were brought to London for a world dress show. They came from Paris couturiers, from the U.S.A., Australia, Belgium, New Zealand, Sweden and Switzerland to be shown alongside designs by London couturiers and the wholesale houses.

More recently Barbara Goalen, Britain's number one fashion model, went round the world with a one-woman fashion show. West Cumberland Silk Mills, sponsored the trip in which Miss Goalen travelled 40,000 miles in four weeks in order to sell British fabrics and clothes in places as far distant as Auckland and Honolulu.

Five Star Firm

Sekers has two couture collections a year, two wholesale collections (used by the wholesale makers-up), two American collections, and periodic nylon collections. Still another collection is taken round each season to the stores for over-the-counter sales.

And the results? The firm have five achievements to their credit:

- (1) they gave the world a lead in the development of nylon fabric;
- (2) they were the first British manufacturers to produce high class fashion fabrics in the economical 48in. width;
- (3) they supply fabrics to nearly all the leading French couturiers, including Dior, Balenciaga, Dessès, Schiaparelli, Fath, Castillo and others—a unique achievement for a British firm;
- (4) they have established a world-wide export trade, with markets in Australia, Eire, Belgium, Canada, France, New Zealand, Sweden, Switzerland and the U.S.A.;
- (5) they have increased overall production by more than 300 per cent.

The Name is Nicholas

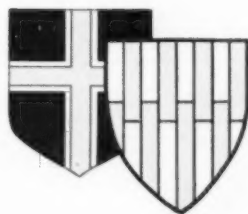
Sekers retains his youthful and ebullient personality. A few months ago he celebrated his 41st birthday. Sensing that the occasion should be marked in some way, he decided to sign his letters with his real name, Nicholas. But everyone went on calling him Miki.

He willingly acknowledges his debt to de Gara (who trained the workers and continues to act as technical and administrative chief at the mills), to the couturiers who first helped him to fame and fortune (first promotion booklet put out by the firm contained a tribute to the late Mme. Bianca Mosca), and to the men and women of Cumberland who make the stuff of his success.

BUSINESS

surveys the Development Areas:
Robert Spark reports on

NORTH-EAST ENGLAND



THE north-east saw the birth of the first government-financed trading estate at Team Valley, Gateshead-on-Tyne, in 1936.

IN August, 1937, there was only one estate with 50 tenants. In 1949, besides Team Valley, there were 29 other estates and sites throughout Northumberland, Durham and North Yorkshire. There were 250 firms employing 32,000 workers.

THE estates have brought a wide range of manufacturers to the area, which previously had to rely on two or three

basic industries. Products range from mining machinery to table mats.

UNEMPLOYMENT, main reason for the setting up of trading estates, is now no greater than in other parts of the country. In 1936 there were 137,692 men and 10,147 women unemployed in Northumberland, Durham and Cleveland. Today the total unemployment figure for the Northern Area (which is larger than the one above) is only 29,100.

HERE are the stories of five firms showing the problems they met, the methods they use and their achievements.

The Husband Makes Them—The Wife Sells Them

How Good Products, Good Relations Win Success for a Young Firm

Continuity—the state of being continuous, as the dictionary says—is the password to success at this Team Valley firm: continuity in the quality of the product and in relations with their suppliers, customers and staff.

This major policy extends even to the handling of correspondence. Every letter is acknowledged or answered on the day it is received.

Headed by a husband-and-wife team, the firm have built up a solid business, both at home and abroad, in six years.

IT is not often that you find a husband-and-wife team at executive level in a firm, but this is the case of Smith's Electric Vehicles, Ltd., manufacturers of battery-powered electric delivery trucks, at Team Valley. Managing director of the firm is H. W. Heyman, B.Sc., M.I.E.E., and his sales manager is Mrs. E. Heyman.

The firm began in 1946 as a subsidiary of Northern Coachbuilders. The latter, in turn, originated in the idea of Sam Smith, O.B.E., owner of the large tea firm of Rington's, Ltd., for starting new companies in depressed areas which would supply equipment to his own company. Since then Smith's Electric Vehicles have not only moved from their original premises of large Nissen huts into their present factory, but have become an independent company.

For the first four years Mr.

Heyman, a technician, who has spent his life with electric vehicles, was without his wife's help. But as the company progressed he realized he could not look after both sales and administration and technical development. Personal selling was needed. So at the beginning of 1950 Mrs. Heyman joined him—the product serves the housewife, so that a feminine viewpoint is often specially useful. Both have ability—one technical, the other sales. A grandson of Sam Smith, Douglas Smith (Junr.), A.C.A., completes the team as secretary and director. All work well together—and with other people.

Today the firm turn out between one and two vehicles a day. Because of the individual requirements of customers, the plant is geared up (or is it down?) to "custom building" with skilled body-



H. W. Heyman, left, discusses problems with one of his factory staff.



Centre, old and new. A Smith's vehicle used by a Vancouver dairy. Lower, spacious interior of one of the mobile shops.

building and paint shop staffs. Modern methods are to the fore—portable power tools are used extensively, jigs and special frames speed the fabrication of chassis.

Large Orders

It would, however, be wrong to imply that Smith's never make two vehicles the same; standard models have been evolved for delivery vans and mobile shops, which are machined and built in batches. They have had many "runs" and have supplied over 200 vehicles to the Express Dairy, over 100 to Corona, the soft drinks firm, and to the Co-ops, their best customers, well over 1,000. All this has been achieved with a pay roll that is only just into three figures.

Nor are they standing still in the introduction of new models. Once their staple product was the delivery truck—for the dairymen, butcher, baker, greengrocer—but in 1948 they introduced the mobile shop, and this has become so popular that in money value it now forms 50 per cent. of their business. Based on a standard design, the customer can have the interior of the shop varied to suit his trade and personal preferences; it can incorporate such features as a washbasin, refrigerator, showcases and fluorescent lighting. An even more recent extension of the mobile shop is the self-service mobile shop. The first of these, built for the Express Dairy, was illustrated in "People, Products and Places" in the April issue of BUSINESS.

Export Successes

In exports success has also been won. Vehicles have been sold to Belgium, Argentina, Brazil, South Africa, Australia, Bermuda, Spain, Germany, New Zealand and Canada. Smith's export more than all the rest of the electric road vehicle manufacturers put together. In August they exhibited at the Toronto National Fair, and earlier in the year Mrs. Heyman visited the U.S.A. and Canada to investigate sales prospects.

Such achievements only result from a carefully planned and executed policy. One instance of this is the way correspondence is handled. It is major company

policy to answer or acknowledge every letter on the day it is received. Much of the correspondence is dealt with by Mrs. Heyman. She dictates so rapidly that it is difficult to take an accurate note. She has found the answer in a *Palantype* machine and operator, who can keep up with her. Mr. Heyman makes considerable use of a *Dictaphone*, which he has arranged so that he can use it in his office or car.

The success of Smith's Electric Vehicles can be summed up as good products, good relations. One of their greatest assets has been the continuous and pleasant relationships with suppliers and customers "We are great believers in continuity," says Mr. Heyman. "In particular, the success of a firm lies in the continuity of its executives."

Quality First

To get good relations you need good products, and Mr. Heyman does not hide the fact that their vehicles are the most expensive of their type. But by working up to a standard, and not down to a price, they can be generous with their guarantees, and can produce a vehicle which, day in and day out, can reliably deliver two pints to "The Elms," or a large white and a small *Horis* to No. 52, The Avenue.

3 POLICIES FOR MANAGEMENT

W. H. Heyman, managing director, Smith's Electric Vehicles, Ltd., attributes the success of his firm to three main factors:

1. A quality product built entirely within their own works to suit customers' requirements.
2. Good personal service both before and after sales.
3. Continuity—of suppliers, customers and staff.

He Concentrated on Design, Price, Presentation

How to Turn a Utility Article into an Attractive Gift Line



This article in
ONE MINUTE

WILL GEORGE, managing director of Celluware, Ltd., started his business in 1933 in the classic tradition of enterprise: £100 capital, no experience and unlimited faith in the article he was going to make. The products were table mats, the location Uxbridge and his initial staff consisted of himself, his wife, his father-in-law and one worker.

The picture is somewhat different now: a busy factory on the Team Valley Trading Estate, 115 workers (mainly girls) and a large export trade. Two things are still the same: the product and Mr. George's faith in his ability to make and sell it.

When in 1937 expansion was necessary, they accepted the help offered by the North-Eastern Development Area and moved to Team Valley. The factory was taken over when war broke out but they carried on in a disused church at Jesmond. Since it was derequisitioned in 1946, the number of workers has increased by about 300 per cent. and the turnover by 400 per cent.

Basically what Mr. George did was to take a plain utility article and convert it into an attractive and inexpensive gift line. For these he laid down three essentials:

1. Good packaging and presentation.
2. Many different designs to suit different tastes.
3. Inexpensive in price.

Evidence of all three points can be seen at Celluware's factory.

1. *Packaging.*—All sets of mats are attractively packaged, labelled and priced so that the retailer has only to put them on display, and his work is cut to the minimum. The customer is interested. These mats look like gifts.

2. *Range.*—The range of products includes table mats, trays, cocktail mats, place mats (which

A plain utility article can be made to pay handsome dividends—if it is turned into a gift line.

This is what Will George did with table mats. And he concentrated on good packaging and presentation, designs for every taste in a wide range of mats, and an inexpensive price.

But he also had faith in himself and his product. For less than 20 years ago his staff consisted of himself, his wife, his father and one worker. Today, with 115 staff, he sells at home and abroad. In the last eight years turnover has gone up 400 per cent.

Mr. George has still one sales ambition unfulfilled—to break into the U.S. market. He intends to do so.

are larger table mats) and plaques (for export only). About 50 different designs are applied to the range. These are frequently changed and the less popular ones are dropped. The current range includes London Cries, Edinburgh views, hunting scenes, some of Constable's famous paintings and a selection of the works of contemporary artists (this is a recent experiment). Some designs are con-

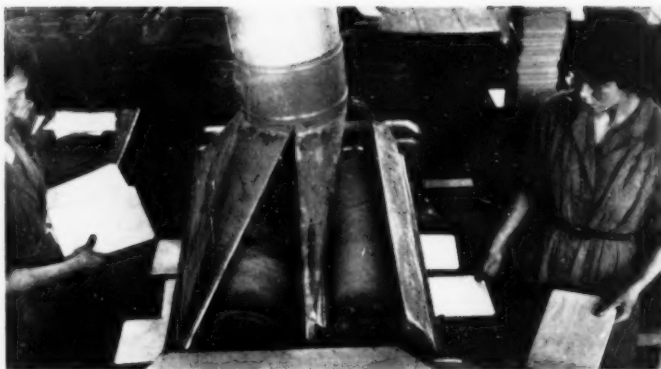
sistent sellers and three have been produced without a break since the firm started in 1933.

3. *Price.*—The question of cost is vital. Much of Celluware's success has hinged on low prices and even today they offer attractive gift lines that retail at under 5s. They achieve low prices—which have not altered in the last five years—by constantly improving production methods.

An example of this is in the surfacing section. Until recently the wood blanks were surfaced on machines with a top output of 200 an hour. But the Georges (his son came into the business in 1946) found a German machine which requires less labour and has an output of 2,000 an hour. This caused production costs to drop considerably.

Table mat production requires a certain amount of hand work where no new machine can help. To get the best from their workers, Celluware run bonus and profit-sharing schemes. Every section has a different hourly wage scale. If production goes up in one section, and stays up, the operatives get paid more in the form of a bonus. Throughout the factory everyone is paid on merit and not on age or length of service.

The profit sharing scheme consists of 4 per cent. of the turnover and is paid out every quarter. Mr George makes this payment per-



Celluware have kept their prices stable through better production methods. This surfacing machine is a typical example.

sonally to each worker and thus keeps in personal touch with everyone, welcoming complaints and suggestions. When it comes to supervisory staff Mr. George believes in the principle that if you hire a man to do a job—then let him get on with it. Staff are given plenty of authority and receive the minimum of managerial interference.

Costs Watched

Because of their large output of small articles at low prices, Celluware vigilantly watch all costs—but not with a large staff and complicated equipment. One man, armed with pencil and paper, does the job simply and effectively—and so far no one has been able to show a better way. Not only do the costing and analysis figures provide management with a quick and accurate guide to costs and output, but they are used to complete the workers' bonus.

Selling begins where the production line ends. The home market is dealt with through representatives, plus a London agent. In the early days at Uxbridge, the firm would make mats from Monday to Thursday, then on Friday Mr. George would go to London to sell the week's output. He is particularly proud of the fact that 97 per cent. of their customers, once they went on the books, stayed there. This, he thinks, is due to the variety of their lines, their quality and, above all, their low production costs per piece.

Export selling has also been suc-

cessful and has been achieved by strict attention to the principles Mr. George laid down for the running of his business, plus those "extras" which are so important in winning overseas markets.

Although Celluware have a number of agents abroad, much selling is done direct. They have found that for the small firm one of the most satisfactory ways to obtain overseas orders is by exhibiting at the B.I.F. They have been showing in the fancy goods section every fair since 1934. They also regularly exhibit at the Fancy Goods Fair at Harrogate. This year they took space at the Canadian International Trade Fair, where they were the only British firm in the fancy goods section.

Canada, Yes; U.S.A., No

They have been quite successful in Canada and besides selling British designs such as the London Cries and hunting scenes, have produced mats and plaques with local views. Recently they handled a large order for plaques showing Niagara Falls. They get the colour prints from Canada, make up the plaques and send them to Canada—still at a competitive price.

Since 1945 Mr. George has been diligently trying to break into the U.S. market. He intends to succeed, even if it takes another seven years to do it. Considering the firm's progress since 1933 it seems fairly safe to say that some U.S. citizens will be putting their plates on Celluware table mats sooner or later.

6 Success Hints For Exporters

1. **Give the customer what he wants.**
2. **Keep prices competitive.**
3. **Make it easy to buy (e.g. in export price lists always quote an inclusive figure covering the product, carriage and packing).**
4. **Keep to delivery promises.**
5. **See that every item is attractively packaged.**
6. **Appoint agents you have seen personally, whom you know and who know you.**

This 4-Point Policy Cuts Costs and Builds Sales



This article in
ONE MINUTE

A four-point management policy dominates the day-to-day running of two closely associated firms on the Team Valley Estate:—

1. Continuous research and development of new products.
2. Design, and manufacture, of most of the plant and machinery used in the factory.
3. Strict control of manufacturing methods, to ensure not only high quality production but also valuable economies in the raw material—the costliest item in production.
4. Careful training of labour—which in some cases takes five months.

This policy has paid dividends and a solid business has been built both at home and abroad.

CONTINUOUS research and strict control of manufacturing methods have always been the watchwords of Colmore Adhesives, Ltd., and the Tyneside Safety Glass Co., Ltd. By following this policy, they have succeeded where others have failed.

Although the two firms are closely associated, they are run quite separately and with the exception of a joint laboratory, they occupy different factories on the Team Valley Estate. Colmore Adhesives came first by some three years, being formed in 1937. Attracted to the north-east by low factory rents, they moved into a 1,500 sq. ft. estate factory in 1938. This original plant today acts as the research laboratory for the two firms and their combined factories now cover 80,000 sq. ft.

Colmore's first products were

small safety glass lenses for eye protective goggles. Then, in the war, came eyepiece discs for Service respirators, and they were eventually producing these at the rate of 250,000 a week. These were made of laminated safety glass, which, for the uninitiated, is a sandwich—the "bread" being ordinary glass stuck to the "meat" which is a plastic interlayer.

Since the war, production has been switched to clear safety lenses and protective filters for industrial operations, such as gas and electric welding. They have developed their own dyeing technique for colouring the plastic interlayer, and have also developed a new type of welding filter consisting of a transparent film of metallic silver and a coloured interlayer sandwiched between two pieces of glass—another example of how the continuous design and research policy pays dividends.

But Colmore's are not so immersed in research that they cannot see an opportunity for making a perfectly ordinary product if it will sell. Thus, when they started producing a laminated tinted lens for use in sun spectacles, they found customers preferred the ordinary glass-meniscus type. The customer always being right, Colmore's built a glass-making plant and built up a production of 40,000 lenses a week.

It had always been the management's intention to produce the large type of safety glass used in the motor car industry and it was because of this that the Tyneside Safety Glass Co., Ltd., was set up in 1940. Since then the production of laminated safety glass has gradually been increased until now they are producing 30,000 sq. ft. per week.

As with Colmore, there have been developments. One of these is the manufacture of curved laminated glass—which requires very great accuracy—and they are

Continued on next page



G. Culpitt

3-Stage Plan of Labour Training

TRAINING labour has been a major problem on every trading estate. Often the workers were not only unskilled but unused to factory life.

G. Culpitt, managing director of G. T. Culpitt, Ltd., makers of artificial flowers and cake decorations, solved this problem in three stages:—

1. The first girls taken on were sent from the North-East to the firm's London factory where they received basic training.
2. On returning they taught other workers in temporary premises (halls, empty shops, and so on) which were used to start production while the factory was being built.

When the factory was completed, in 1950, a number of workers were ready to start production proper.

3. But as some were naturally not yet fully skilled, output was at first limited to simpler products. Gradually more complex designs were introduced and now complicated products are made there.

Meanwhile training of supervisory staff—all recruited locally—went on and today the Ashington factory is completely self-contained and, from the factory manager downwards, staffed and run by local people. There is a payroll of over 300 and the factory, once thought adequate, is now too small.



Continuous research is the key to Tyneside's success.

already producing the most difficult type to manufacture.

Tyneside are now also producing toughened safety glass. This has no plastic interlayer and is made by heating a sheet of glass to its softening point and then subjecting it to a blast of cold air. When fractured, the glass disintegrates into small, relatively harmless, pieces. The company, although having quite a healthy production rate of this type of glass, still consider themselves to be in the development stage. One of their latest "gimmicks" is a new type of furnace employing gas instead of the more usual electrical heating—yet another product from Tyneside's backroom. Another of their "lines" is bullet-proof glass, which is in good demand for tanks and aircraft.

The company's staff has not only designed most of the plant and machinery used in the factory, but much of it has been built on the premises as well. This again, is considered policy, and there are well-equipped engineering and joiners' shops for this purpose.

All the employees (70 per cent. are women), have been trained by the company. Most of the jobs are semi-skilled, but a few—such as cutting—require anything up to five months' training and the trainee must possess a natural aptitude to achieve success at all.

But labour costs form only a small fraction of total production costs. The greatest cost in the manufacture of safety glass lies in the raw materials, and valuable economies in the use of these are ensured by the strict control of manufacturing methods which

dominates the firm's manufacturing policy.

Selling has not been neglected. Here there has been a narrowing rather than a broadening of the field. They concentrated on the

stockists' market both at home and abroad. Through extensive travelling by their sales executives, a large export business has been built up. Markets supplied include Scandinavia, the Middle East, Africa, Canada and the U.S.A.

The latest development of Colmore Adhesives and Tyneside Safety Glass has not been in the realm of new products, but an amalgamation with Suintex Safety Glass Industries, Ltd.

In spite of their progress, both companies regard themselves as being in the early development stage, with much more to be accomplished. With a third member now in the team and with their success so far, they can look to the future through rose-coloured spectacles—made of safety glass, of course.

A Man of Ideals tells His Story

How Determination and Faith Overcame Great Odds



This article in
ONE MINUTE

This is a story that every private enterprise businessman should read. Unlike other BUSINESS features, the emphasis is not on the effects of know-how, mechanization or new equipment and methods. Instead it deals with the philosophy of business. A subject equally vital and stimulating.

It is the story of a man who put personal success and security on one side to try an experiment in management. Who, through a combination of circumstances, saw nearly every aspect of the experiment fail and then gradually steered the project out of danger.

IN 1929, at the age of 30, George Blair became general manager of a previously liquidated engineering works. By hard work, and with a loyal staff, this was turned—in the face of the slump—into a prosperous concern with a payroll of 600.

Eleven years later, in 1940, he acquired steel foundry premises which had a 20-year record of failure. This, too, became a success, and in a short time he built up six small engineering and allied companies.

At this juncture, most men would have done one of two things.

1. They might have carried on, satisfied with their achievements and financial rewards.

2. They might have been ambitious, intent on extending and enlarging their business empire.

For George Blair there was a third alternative. Over the years he had formulated his own philosophy of management. He desired

to do something for his fellow men and he felt he could best do this at a location where the need was greatest.

In 1941, he had started a small steam hammer forge in a disused gasworks at the mining town of Tow Law, perched on the moors 12 miles from Durham, which, in the inter-war years had a distressing unemployment record—60 per cent. Reactions to this new business were carefully watched and there came setback number one. It was reported that some of the local people, including members of the town council, were deeply suspicious of the profit motive, so that whilst almost everyone there hoped for enterprises to come and provide employment for the future, they would not be universally welcome after arrival.

Disadvantages . . .

The disadvantages of the location were obvious: untrained labour, comparative isolation, lack of industrial services and social amenities. And yet, to offset this, Mr. Blair's experience had satisfied him that rural workers in industry can, by their application of an overcome the difficulties of location, provided they are set to work in a rational manner under good management; moreover, the cry was to bring the work to the people. This case was nevertheless one of the most difficult to deal with in the country and it was with pleasure that Mr. Blair felt the attitude had changed in 1943 when he was asked to join the Tow Law Industrial Development Board. This provided an opportunity for him to put forward his ideas and ideals in the form of an industrial charter, and acceptance of this was to be the condition of his continuance with the Board. The charter was adopted but this was too much for a number of members and Mr. Blair became the director of a newly-constituted but smaller Board.

In 1945, there was considerable apprehension about the hundreds of people who would be discharged from the Forces, and it was thought they would impose on the town an immediate pattern of pre-war unemployment. Personal approaches to influential people and organizations, and the exami-

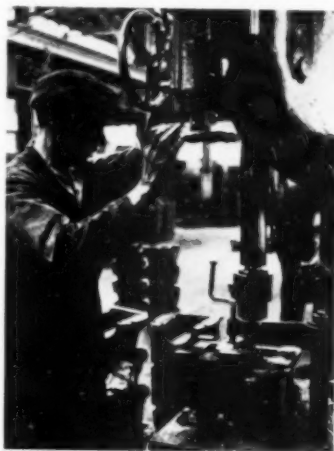
nation of many possibilities were leading nowhere.

The Board turned to Mr. Blair to ask whether he could do anything more, personally. The answer was immediate; two separate properties were acquired, adapted and extended to serve temporarily as an iron foundry and a machine shop. Diesel electric power was installed and many expedients resorted to in the feeling that this was a worthwhile social effort.

The products were of a selected and specialized nature to suit the labour, and despite scorn and warnings of disaster, the new project was very soon employing 100 men.

Initial administrative staff costs were expectedly very heavy because of the field work necessary. The administrative staff, with technical and supervisory staff from the city, were deliberately organized on a liberal scale to ensure that the greatest impetus was given to the business. Property was purchased as a hostel for technicians and key workers; other houses were bought for the foremen and general manager. There was pulsating, pioneer enterprise in all this, with considerable rough going, including a climate where winters, unfailingly, are lengthy and hard.

In a practical sense, these steps might be accounted successful. The profit in these beginnings was naturally small but they gave birth to the acquisition of a



Products were selected to suit the labour.



George Blair, a practical philosopher.

"factory-like" Ministry of Food storage building at Stanhope, eight miles away, to serve as a larger iron and steel foundry. Also the Board of Trade had been asked to provide a small Trading Estate for Tow Law. They said no, but offered to build a factory under the North Eastern Development Area scheme at Mr. Blair's personal responsibility for its occupation and use.

. . . and Setbacks

The new factory was ready in the summer of 1948, but simultaneously difficulties and setbacks occurred, with considerable speed and force. Long term business prospects were inverted by the political circumstance of nationalization policies, whilst international events combined to negative the bulk of the firm's export work.

Other products in the course of preparation did not ease the situation to any great extent. Far from there being plenty of people, enthusiastically seeking work, there was a shortage, and almost no apprentices to train into skilled men, so that it was impracticable to try and change the face of the business since economic values from the labour could only be obtained at semi-skilled trainee level. Mostly, the employees were the older men who found the mines unsuitable. The demand for coal, and the miners' scale of wages had, in fact, meant that the

Continued on page 119

BUSINESS

surveys the Development Areas:
Frank G. Casey reports on

SCOTLAND



SCOTLAND'S industrial estates differ from those elsewhere. Scotsmen think about their industry and economy along national lines. Scottish Industrial Estates, Ltd., landlords of the trading estates, first sprang from the Scottish Development Council set up by Scottish businessmen in 1931.

THE position was then desperate; a quarter of the population was out of work, exports were down to 37 per cent. of the 1920 figure. The S.D.C. made recommendations to the government.

In 1934 the Special Areas (Development and Improvement) Act became law.

THE first Scottish trading estate was opened at Hillington in 1937. By 1939 there were 90 firms, tenants of four estates.

THE 1945 Distribution of Industry Act greatly accelerated development. Today there are 23 estates, 19 individual factories, and 17 former government factories controlled by Scottish Industrial Estates, Ltd. These house 330 firms and have provided new jobs for 50,000 people.

Youth Goes After the Dollar Markets

These 5 Policies Made Export Records in a Few Years

ONE of the new industries brought to Dundee since the war is the manufacture of refrigerators. The organization responsible for this development is Albion-Astral, and their story is one of remarkable enterprise and initiative.

Formed as recently as 1946, the company quickly established an outstanding export record—91 per cent. of which is to dollar countries. Besides this, they have set up factories in the United States and Canada to manufacture and fit cabinets to cooling units made in Dundee—this in the home of domestic refrigeration.

Albion Light Metal Products, Ltd., actually started by manufacturing kitchen cabinets. Then the directors had the idea of producing a "baby" refrigerator, and obtained the manufacturing rights of an absorption cooling unit of Swiss design. So Astral Equipment,

Ltd., were formed to make and market the refrigerators. In 1948 first Astral and then Albion moved on the Dundee trading estate, and the major expansion of the concern dates from then.

All the labour for the new factory was recruited locally and trained by the company; this holds true even for the works manager and the foreman. To enable production to be expanded quickly to keep ahead of the demand, a minimum of fully-skilled men were employed. A small training department is maintained, and here men can be trained to do semi-skilled jobs in six weeks. Total labour force is now about 200.

Five main factors are responsible for this rapid growth

Firstly, the accent has always been on youth at Albion-Astral. All the directors are under 50, and the average age of the staff is only 33. The firm believe that a good deal

THERE are merchant venturers still. The smaller firm can yet defy competition and overcome difficulties—provided courage, initiative and enthusiasm are present. SUCH qualities are possessed by a Dundee firm which began making kitchen cabinets in 1946 and then turned to refrigerators. Rapid success with locally trained labour led to the planning of factories in the U.S.A.—the home of domestic refrigeration—and Canada; assembly is also done in New Zealand and Uruguay.

of the enthusiasm and vigour of the concern is attributable to this policy.

Secondly, product policy. Though variations have since been introduced, the management concentrated on one model and built up a strong position with it. This model is the Astral Baby, a 1½ cu. ft. capacity unit, designed to sell to middle and lower income groups.

Thirdly, marketing policy. Right

at the start the directors decided that in their own and the national interest they would export as much of their output as possible, and would concentrate on dollar markets. Good initial selling success in Canada determined them that, to avoid import restrictions, tariffs and excessive transport charges, they would beard the lion in his own den and set up a factory in Canada.

Personnel from the Scottish factory went to Canada to help set up the associated Canadian company, Taymouth Industries, Ltd. The company were incorporated in 1948, at Toronto. Some of the original Scottish personnel, including two directors, have made their permanent homes in Canada.

The scheme's success justified expansion to other countries. An American associate, Astral Industries Inc., was formed in 1949 at Rockleigh, New Jersey, about 20 miles from New York. Assembly is also done in Auckland, New Zealand, and in Uruguay.

This arrangement has a two-way advantage, for many improvements have been made in the production layout and methods at Dundee as a result of "know-how," learned from the Canadian and U.S. factories.

Fourthly, price and production policies. It will quickly be obvious why these must be dealt with as one. Albion-Astral follow with single-minded conviction a conservative price policy. The Astral Baby is still priced at £32 17s. 6d., and they have avoided any large increases in their prices.

To achieve this in the face of steep rises in material and labour costs has only been possible by more efficient production methods, using the most up-to-date equipment and maintaining good labour relations. Much time and money have been spent on improving manufacturing techniques. An example of the re-equipment that is constantly going on is the recent installation of a water-wash spray booth of the latest type. This is more efficient, uses less paint, and is much healthier for the workers to use than the previous type.

Materials are ceaselessly under survey. By using aluminium and plastics extensively, Albion-Astral have avoided serious production hold-ups through shortages of steel. Although in some ways more difficult to work, these materials proved to have some advan-

tages. Their lightness made the refrigerators very portable.

Meanwhile, good labour relations are fostered by various means. A suggestion scheme works well and generous rewards are given for ideas that are adopted. A committee elected by the workers meets regularly. A bonus scheme is arranged to work as an incentive, and is not just taken for granted. Each worker is carefully classified for efficiency; anything he achieves in excess of this is rewarded.

Finally, selling policy. Albion-Astral sell inexpensive refrigerators as a necessity, not a luxury. They have put themselves on the map—the world map—by wide-



One of the striking showcards for the Astral Baby.

spread advertising. Many media have been used to put two ideas across; the name Astral and the fact that it is "the baby refrigerator." Considerable thought has been given to the design of display matter, such as showcards and other point-of-sale advertising so that it harmonizes with the design of the equipment itself and stresses both the name and the product.

Though concentrating on the standard Baby, several new models have been introduced that will run off coal gas, butane, or kerosene. These have opened up new export markets in parts of the world where mains electricity is not available. Another development is a model that can run off either 230-250-volt mains, or off 12-volt batteries.

Adaptability Won

Him His Reward

Vincent Arcari



TYPICAL of the men with ideas who have been given a chance to put them into profitable practice by the trading estates is Vincent Arcari.

Born in Glasgow 43 years ago of Italian parents, he was trained at Glasgow University as an engineer. He was particularly interested in display work and in his spare time he combined his talent for design with his engineering skill by making show-cases and cabinets.

In 1936 he decided to produce these commercially, and Glass and Steel Products, Ltd., were born. At first he had only one employee to help him, but the business flourished. Besides making show-cases they also designed and fitted out shops, cocktail bars, cafes and exhibition stands.

In October, 1939, Glass and Steel moved into a 2,400 sq. ft. "nest" factory at Hillington. During the early war years they ran into difficulties through raw material shortages and a falling off in orders. It was at this time that Mr. Arcari learnt a lesson that has stood him in good stead. It was that to survive, a firm of the size of Glass and Steel Products must be adaptable and prepared to tackle a wide range of work.

To relieve immediate difficulties they sought and got contracts from the Admiralty and the Ministry of Supply for cooling and refrigeration equipment, aircraft parts, shell racks and smoke observation gear for warships, etc.

After the war the company developed the refrigeration section and also reverted to display and shop fitting equipment. Among other things they designed a milk cooler which prevents the accumulation of frozen milk on the cooling surfaces. Patents have been granted to protect this and other equipment.

Mr. Arcari is an active member of the executive committee of the Hillington Industrial Estates Tenants' Association and has served a term as chairman.

This 4-Phase System Gives Management How the When and Cost of Inefficiencies Why

WORLD production of chemical and pharmaceutical products is largely concentrated in the hands of a few mammoth organizations. The reasons for this are many but the chief one is the huge sums that must be spent on research to keep abreast of competition.

That a firm so young and comparatively small as Organon Laboratories, Ltd., can not only survive, but in some fields actually lead its competitors in this industry, is remarkable. Remarkable, but not inexplicable, for the success of Organon is soundly based on policies and methods that are rational, progressive, and all embracing.

Deriving its roots from a Dutch pharmaceutical concern, Organon is now wholly British owned and financed. Its separate existence dates from the early war years when an 8,000 sq. ft. factory was opened near Wimbledon for the manufacture of steroid hormones. Briefly, these are secretions of the ductless glands used in the treatment of a large number of diseases such as Addison's disease and rheumatoid arthritis. They are manufactured either naturally from animal products or are synthesized in the laboratory and works. Organon were the first British firm to produce these substances; they also pioneered the alternative branch of endocrinology (the science of hormones) by producing substances that stimulate the body's own glands.

By 1948 Organon had decided that expansion was justified and they looked for suitable new premises. These they found at one of the Lanarkshire trading estates — Newhouse — and they moved there 3½ years ago, the sales department, medical service



**This article in
ONE MINUTE**

Modern versions of the David and Goliath episode are always fascinating—and encouraging. Here is the story of a young and comparatively small firm which have survived and flourished amid the mammoths.

They have always had a three-fold policy :

1. To increase sales.
2. To find new products from research.
3. To lower the unit cost of production.

This article is mainly concerned with the third policy—for here are methods capable of use by many firms in different fields. The basic cause of success is a four-phase system of standard costing and budgetary control which has paid dividends time and again.

department, etc., remaining in London. When they went to Scotland all labour had to be trained from scratch. This was accomplished by bringing workers in groups to undergo a course of training at the Wimbledon factory.

From the very beginning, the policy of Organon has been three-fold:

1. To increase sales.
2. To find new products from research.
3. To lower the unit cost of production.

Brief reference only need be made to the first and second headings, for both these are too specialist to be of general interest. Widespread advertising in medical journals and the circulation to doctors of publications explaining the latest advances in the science of hormones, were weapons in the drive for more sales.

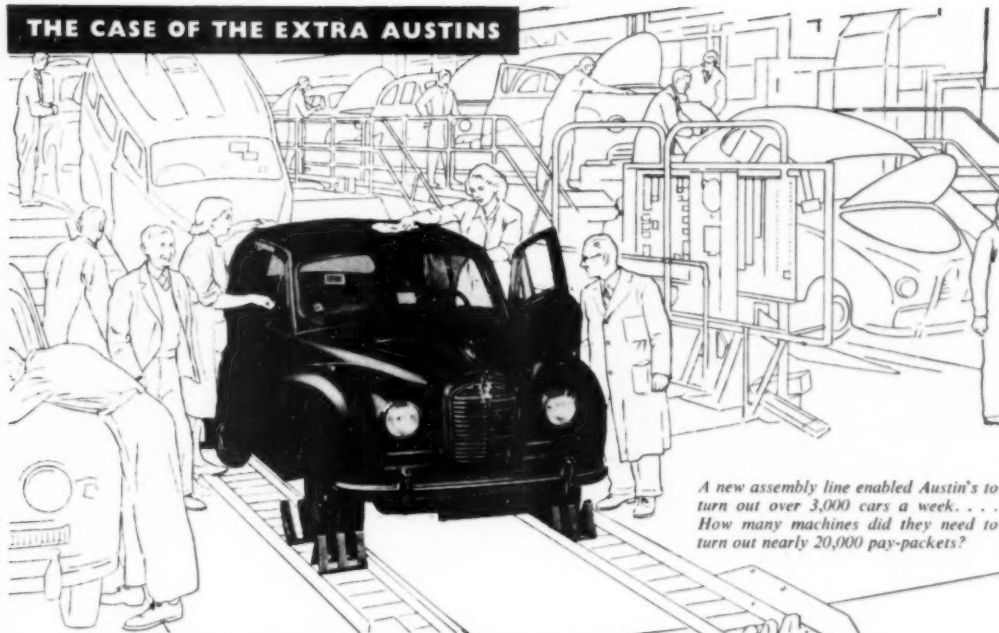
Research, of course, meant employing a staff of highly qualified chemists, bio-chemists, chemical engineers, etc., and the expenditure of large sums on equipment.

continued on page 80



Elaborate precautions are taken during ampoule filling operations at Organon Laboratories, Ltd.

THE CASE OF THE EXTRA AUSTINS



A new assembly line enabled Austin's to turn out over 3,000 cars a week. . . . How many machines did they need to turn out nearly 20,000 pay-packets?

More cars for export, more figure-work—faster

AT LONGBRIDGE, the great Austin Motor Company is now turning out well over 3,000 cars every week—the greater proportion for export.

This phenomenal production rate owes much to the output from the new Car Assembly Building, which houses the most modern assembly lines in the world.

Austin's full production programme, however, has thrown new burdens on office departments, where the pay-packets for nearly 20,000 workers—and all that additional information on P.A.Y.E. operation, needed by Government and Tax Authorities—have to be prepared every week.

Could office production be stepped up and streamlined, too? Austin's thought so, and called in Burroughs to help. After investigation, Burroughs suggested the installation of their Class 30 machines to handle all Payroll problems, and, just about the time

the new Austin assembly plant was ready, these machines went into operation.

Result: The Austin Payroll can now be prepared, and payslips issued, as fast and as smoothly as car-assembly in the shops. The workers are paid from one unit of 14 machines—less than half the number of machines previously employed.

Every worker gets a concise, fully-informative payslip which tells him exactly where he stands, and how his pay is made up.

These machines also produce prompt figure facts, which include the main Cost Analysis, and up-to-date Tax and Earnings Records that provide immediate answers to tax queries.

What about you? If your business could benefit from faster figuring, call in Burroughs. They can offer advice on all the latest systems, for Burroughs make the world's broadest line of

modern record-keeping machines: Adding, Calculating, Accounting, Billing and Statistical Machines, and Microfilm Equipment.

Call Burroughs today. Sales and Service offices in principal cities round the world. Burroughs Adding Machine Limited, Avon House, 356-366 Oxford Street, London, W.1.



Photographed here is Miss Madge Tomlinson, of the Burroughs Installation staff, who instructed the Austin operators in the use of the Burroughs Class 30 machines on Payroll work, and helped to solve the Case of the Extra Austins.

For expert advice on business figures

CALL IN Burroughs



A *Completely New* Accounting Machine

**READY FOR ANY JOB
AT THE TURN OF A KNOB**

"COMPLETELY NEW"—that can be said, without reservation, of the Burroughs Sensimatic Accounting Machine. If you find it hard to visualize an accounting machine that is *limitlessly* adaptable, capable at the turn of a selector-knob of doing countless different jobs for a small firm, or a vast amount of one particular job for a large organization, it is time you saw the Sensimatic in action.

The key to the machine's astonishing versatility is the newly discovered principle of "Sensimatic Control"—the incorporation of a "mechanical brain" that directs the machine through every mathematical function and every carriage movement during a posting operation. Each Control Unit guides the machine through four separate operations, and, since there is *no limit* to the number of different units you can use, there is *no limit to the number of accounting jobs the Sensimatic can do*, and the Control-Unit can be changed by the operator in a matter of seconds.

You owe it to your business to let Burroughs show you the Sensimatic *today*.



Burroughs  *Sensimatic*

COMPLETELY NEW

● **ADAPTABILITY**—A turn of a knob—that's all the effort needed to switch the Sensimatic from one posting operation to another, from Accounts Receivable (say) to Stock Records, Stores, Costs, Payroll, Purchase Ledger, General Ledger, Statistical Analysis; the Sensimatic is reset in a moment for all these procedures . . . and many, many more.

● **SPEED**—The Sensimatic's light key depression, positive form alignment, early key release, make its operation far simpler, far faster, far more easily learnt. Anyone who can operate an adding machine can get the Sensimatic into full production!

This is a Sensimatic Control Unit—which, at a flick of a switch, guides the machine automatically through every mathematical function and carriage movement. Each panel gives you *any four* accounting operations in any combination.



MAKES ACCOUNTING MOVE

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Probably the greatest single justification for the research department was their discovery of a method of producing cholesterol—raw material for synthesizing hormones—from wool waste. Previously this was produced from the spinal cords of oxen, which had to be imported from the Argentine. The new process (which has been patented) is much cheaper than the old one and the wool waste comes from Yorkshire mills. Altogether between 5 and 6 per cent. of turnover is spent on research annually. As a result of the new and improved methods evolved, productivity is greatly increased over what it was 2½ years ago, whilst unit costs have been halved. Whilst the new production methods and processes have been directly responsible for this increased efficiency, the basic cause lies deeper. It is the system of standard costing and budgetary control which provides Organon with a wealth of data enabling them to know exactly where, when and why inefficiencies are occurring and what they are costing in terms of pounds, shillings and pence.

This system operates in four phases summarized as: Plan—Record—Compare—Control. Planning begins in the sales department which, in August, begins to draw up estimates of the sales during the next financial year. This sales budget is of great importance, for on its accuracy depend all the other budgets—production, financial, etc.—and the standard costs. By the end of September considered estimates are given to the factory and are used as a basis for the preparation of a Production Budget. This determines whether or not the demands which sales will make upon the factory can be met or whether more plant or labour will be needed. If, on the other hand, the sales forecast reveals that the factory capacity will not be fully used, steps are taken in good time to introduce new products or otherwise close the gap.

This stage of the planning is reached by early November. Meantime the financial department, on receipt of the sales budget, has set about preparing a trial financial budget. This is used to test the soundness of the sales budget in relation to prices, administration,

The Organon 4-Point Management Plan

1. PLAN

- a. August. Standard unit production and selling costs are worked out on a standard specification for each product.
- b. September. Estimates of sales for each product are made for the coming financial year.
- c. October. Production departments review capacity in relation to sales estimates and make necessary adjustments.
- d. October. Financial department prepares trial financial budget from sales estimates, standard costs and overheads, and revises production and selling programme where necessary.
- e. November. Detailed budgets for individual departments are prepared.

2. RECORD

Each department reports daily on the work it does and the material and labour it uses. Standard costs make this easy.

3. COMPARE

Actual costs incurred are continuously compared with standard costs, and actual expenditure with budgeted expenditure. Inefficiencies show up immediately.

4. CONTROL

A monthly report summarizes variations from planned programmes—and enables remedial action to be taken.

distribution and selling expenses. It is compiled as follows. The budgeted profit is deducted from the revenue which the estimated sales will produce. The figure left represents, when broken down, the permissible cost of each product from manufacture to sale if the profit is to be achieved.

Head office costs are now estimated by preparing budgets for each expense, e.g., advertising, cost of representatives, administration costs, etc. The totals of these are applied over the products and are, where possible, compared with the corresponding costs incurred in the previous year. This second step is dealt with in great detail for it reveals variations which may exist between one year's actual expenses and the next year's budget, for which there may be no valid reason such as a planned extension of advertising activities, etc. If these differences are substantial

the budget is reconsidered, and, failing the possibility of adjusting the budgeted expenditure, the sales prices and budgeted sales volume are investigated.

After the deduction of the final budget of head office expenditure from the figure of the permissible cost of production and sales, the residual figure indicates the cost at which the factory must produce the goods. Standard costs reveal whether or not this can be done.

Compilation of standard costs also begins in August with the preparation of standard specifications. These consist of: (a) a full description of the product; (b) the types and quantities of materials required for it; (c) the processes and operations involved; (d) the man or process hours required for each process or operation; (e) a detailed estimate of the optimum capacity for the particular processes and an estimate of the over-

Continued on page 82



The Board are not agreed...

THE ITEM on the agenda is "Pension Scheme". It might equally have been described as "Provision for Human Depreciation". The growing list of pensioners and widows paid out of current profits has brought the Board to realise that, though without a pension scheme, the Company is already paying the cost of one. The wisdom of funding such liabilities in future is accepted. What cannot be agreed is the method to adopt, for of the many schemes examined by the Secretary none is universally satisfactory, because none is sufficiently flexible. All wear a ready-made air of having been mass-produced to fit, rather roughly, every sort of Company. The Company, however, is not a product of mass-production. It has individual problems, a very clearly defined policy of its own, a necessarily unique age/wage/salary structure. It needs, therefore, a pension scheme designed specifically to fulfil

these highly individual requirements, a scheme that can be evolved only by experts in a specialist field, for many technical considerations are involved. The Noble Lowndes Pension Service designs, installs and administers individually-prepared pension schemes for hundreds of Britain's most important companies. Capital sums involved currently exceed £25,000,000 per annum. "A Noble Lowndes Pension Scheme" on the agenda is passed unanimously by progressive Boards.

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OCTOBER, 1952

81

head expenses incurred at that level. Since, in the long run, the efficiency of the factory is measured on these standard specifications great care is used in their preparation and all departments are required to co-operate to their utmost to see that no detail is omitted nor any inaccuracy included.

Difficulties Overcome

The nature of the processes in certain departments presents considerable difficulty to the amassing of the necessary detail. Yields and material usages vary from batch to batch of the same product and arriving at a fair average is a formidable task. Nevertheless it has been accomplished successfully and standard specifications have been prepared for all the processes in the following production departments:

1. Lower Barnes Farm (an outstation in the Bristol area)—crude natural hormones production.
2. Natural Hormones Dept.—purification of all natural hormones.
3. Cholesterol Production.
4. Steroid Department—pure synthetic hormones production.
5. Pharmacy Department—production of solutions, ointments, implants.
6. Tableting Department—production of tablets.

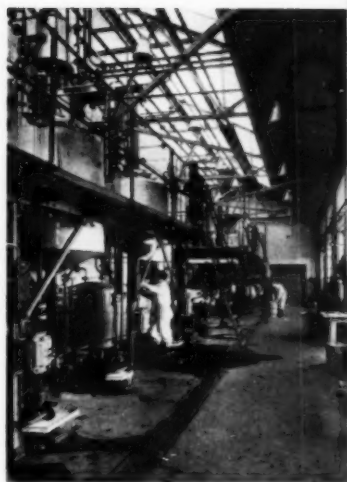
7. Ampouling Department—filling ampoules and vials.

8. Packing Department—packing all products in saleable form.

The next step is the preparation of factory budgets for labour costs, purchasing and overhead expenses. Examination of the production budget and standard specifications enables the required labour force to be ascertained, wage rates determined and allowances made for bonuses, holiday pay, and shift and overtime work. This total cost is amassed and analyzed in a wages and salaries budget which covers not only production departments but also service departments such as the boilerhouse, stores, analytical department, etc.

Similarly the purchasing department in consultation with the stock control section can ascertain the quantities of all material that the factory will require by consulting the production budget and the standard specifications. The purchases budget is then completed by applying the previously agreed standard prices. These prices are based not only on past and present prices but attempt, as far as possible, to forecast the trends of the year to which the standards will apply.

Finally a budget is prepared for the many other expenses the factory will incur—depreciation, rent, etc.—amassed under a great many headings. These are bud-



General view of the Steroid Department. Here fine chemical and hormone products are extracted from the raw cholesterol.

geted in relation to the volume of work forecast for the year and after analysis into fixed, variable and semi-variable expenses the total cost is incorporated into the overheads budget.

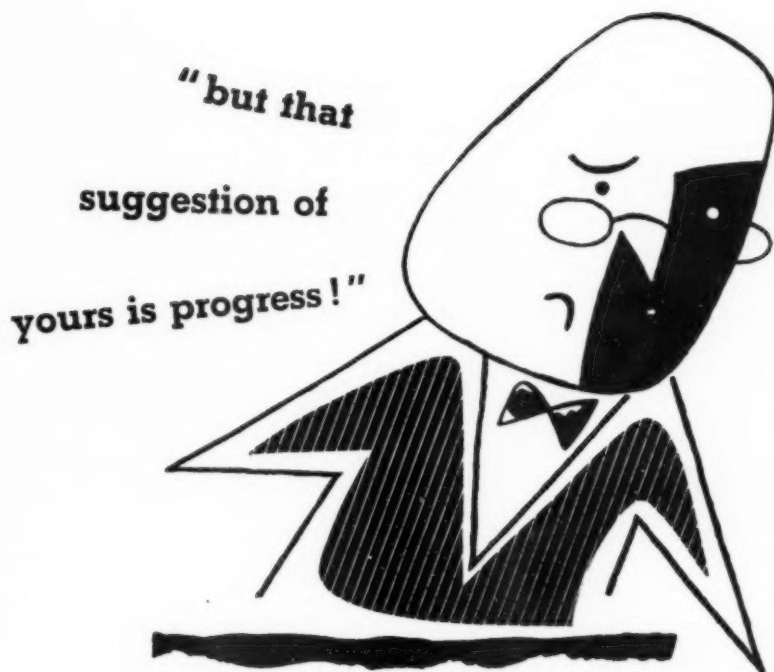
Budgets have now been prepared for purchases, wages and overheads and any capital expenditure. By considering these totals in conjunction with the totals of the expense budgets the total estimated cash commitments of the company can be arrived at. At the same time the factory budgets are applied to the details of the standard specifications of all the factory processes and standard factory costs are produced. It has been argued that this calculation of new standards every year involves an unmerited volume of work and that the annual change invalidates the comparison of the standards over a period of years. Organon feel that the change provides a much more reasonable control tool than they would have by retaining the same standards over many years—particularly in these times of rising wages and fluctuating raw material costs.

By applying these standard costs to the budgeted sales a comparison can be made between this total cost and the budgeted permissible cost calculated in the trial financial budget. Any difference is in-

Why American Firms Go to Scotland

GROUP of firms that looms large in the development and expansion of the Scottish estates consists of those of American origin. In fact eighty per cent. of U.S. firms that have come to post-war Britain have chosen Scotland; 19 now occupy 2,000,000 sq. ft. of factory space and employ 10,000 people—20 per cent. of workers on the Scottish estates. Reasons why these firms chose Scotland are:

1. Scottish Industrial Estates, Ltd., conducted a wide publicity campaign in the U.S. Lord Bilsland, the chairman, toured America, met executives and invited them to visit Scotland as his guests and "see for themselves".
2. Labour (especially female) was available in large quantities.
3. Scotland has been relatively free from power cuts; much new generating capacity is also being built.
4. Scottish businessmen are reputed to be more like their American counterparts than (say) are Londoners!
5. Nostalgic and romantic attractions drew many executives of Scottish origin "back home".



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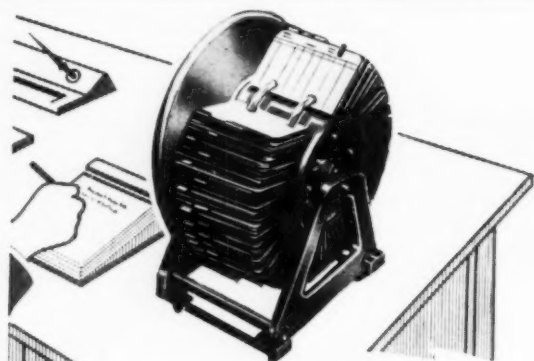
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vestigated (a) to see if expenditure can be reduced or (b) (if the factory total is less than that of the T.F.B.) to see if undue optimism has influenced the estimation of expenditure—so often a budget can be regarded as an indication of what those preparing the budget would like the expenditure to be, instead of what it will probably prove to be. Organon succeed in avoiding this pitfall.

Once agreement is reached the final financial budget is drawn up and the preparation for control is then complete.

Thus far, the first only of the "Plan — Record — Compare — Control" quartet has been dealt with.

Recording: is greatly simplified by the use of standard costs. Each department reports the work it does, and material and labour it uses. These reports, prepared daily, circulate to the office sections concerned and are dealt with daily throughout each accounting period. Thus, there is no delay at the end of a period.

Comparing: actual wages and prices paid, time taken for processes, and yields obtained are all analyzed departmentally and compared with standard cost or performance. Differences between actual and standard are reported to the management under various headings. For example, material, labour and overhead costs, labour efficiency, utilization variance (difference between actual work handled by a department compared with the volume it was estimated to handle), material usage variance, stock discrepancies, breakages, etc. In all, some twenty distinct types of variance from standard are dealt with.

Within a fortnight of the end of each monthly accounting period every efficiency and inefficiency is revealed to the management in terms of pounds, shillings and pence.

Controlling: is therefore positive, accurate and comparatively simple. Instead of saying to a department "The cost of product X has risen" the management can say "The cost of product X has risen because too much material Y has been used." Inefficiencies are traced to their source and corrected. All through the organization the comparison of actual and standard is effected and steps

taken to keep the two in harmony.

The control of expenditure, too, is positive. The danger of overspending on revenue or capital expenditure is considerably reduced since authorization is given with the budget in mind.

The system of budgetary control and standard costing at Organon takes many months of hard and exacting work by the management, the accountants and every

department head to make it successful. That this time and effort is justified there can be no doubt. For to the system the company attribute much of their success in an industry where selling prices are falling, material prices have been soaring and world competition growing daily fiercer. It should not be thought that the pharmaceutical industry is an easy

Continued on page 121

Turnover Up from £100,000 to £1,500,000

How Mechanical Handling Aids Give Streamlined Production

AN old-established Glasgow firm that saw in the trading estates an opportunity to expand and develop production along modern lines are L. Sterne and Co., Ltd. Founded in 1881, the firm are the only one in the country to undertake all four types of refrigeration: domestic, industrial, commercial and marine. In 1945, their Sternette division, which manufactured light plant up to 20 h.p., moved to a Nissen hut factory at Hillington. This division is now larger than the parent concern and occupies four factories at Hillington totalling 220,000 sq. ft.

Man behind this achievement is David S. Carruthers, 52-year-old managing director of L. Sterne and Co., Ltd. He has been with the company 25 years and started as the assistant secretary.

While the main reason for the Sterne success lies in their own skill and ability, they have benefited from an engineering liaison with Tecumseh Engineers of America, the world's largest producers of compressors.

This arrangement has enabled Sterne's to plan their factory layout and production in accordance with the best American techniques, enabling them to get maximum output from available labour and factory space. Technical staff are exchanged each year and most of the senior staff have spent some time in America.

Sterne separate their various



This article in
ONE MINUTE

The last article of these special **BUSINESS** surveys of four trading estates tells how an old established firm set up a division at Hillington which so prospered that it is now larger than the parent company. Starting in Nissen huts the division expanded into four factories totalling 220,000 sq. ft. Turnover at £100,000 in 1938 is now £1,500,000 a year. Staff has increased from 60 to 750 in the same period.

Man behind this feat is David Carruthers, 52-year-old managing director. Under him management has concentrated on three things:—

1. Skilful organization of batch production on flow lines.
2. Extensive use of mechanical handling to give streamlined production.
3. Application of American "know-how" gained from close liaison with a U.S. firm.



David Carruthers has guided Sterne's Hillington division since its inception.

production and assembly lines into different buildings. For instance, cabinets and cooling units are produced in separate factories.

The production plan for one of these can be taken as typical. Sheets of raw steel arrive from the stores on an electric truck at one end of the cabinet shop. Batch production methods are used and cabinets for a number of different models are usually going through the shop at any one time. A battery of shearing, cropping, bending machines and presses forms the steel sheets into the shapes required. From here they pass directly to the welding shop where they are welded into cabinets.

The welds are now cleaned with portable polishing machines and the cabinets suspended on a continuously moving chain conveyor. After treatment in cleaning tanks they pass through the spray booths and are then stoved in a continuous convection oven. When they emerge they return to their original point on the continuous conveyor and are unloaded.

Next step is insulation with fibreglass or cork slabs. The cabinets are fitted with liner sections which have come down another line and from now on they are either moved on floor-mounted roller conveyors or rest on wheeled "skates" that run on rails. A few types of cabinet are fitted with castors and can be moved on these.

The refrigerating equipment is then fitted in an air-conditioned assembly house. After assembly

the complete refrigerators are given a final polishing and are "shunted" into a bay where they undergo running tests for 12 hours. They are then moved a few yards to the packing department. Here crates (produced in an adjoining bay) are waiting for them. The refrigerators are wrapped in waterproof paper and lifted into their crates by a two-ton overhead travelling crane. This traverses the full width of the shop and serves a dual purpose. It not only

loads units into crates but also lifts the crates on lorries which drive right into the dispatch department. Thus the steel sheet that arrives at one end of the shop leaves the other end as a finished refrigerator cabinet, packed ready to go anywhere in the world.

This streamlined production layout is backed by efficiency in other departments. A few examples: two of the largest brazing tunnels in Scotland are fitted in the condenser and cooler manufacturing block. In these tunnels components are automatically brazed in a controlled atmosphere. Compressor parts are assembled in an air-conditioned shop, the temperature of which is held between 65 and 70 degs., while the relative humidity is kept below 50 per cent.

Proof of the efficiency of these methods is the figure of Sternette turnover. In 1938, a "normal" pre-Hillington year, this amounted to £100,000. Today the figure is £1,500,000 per annum. In the same period the employees in the Sternette division have increased from 60 to 750.

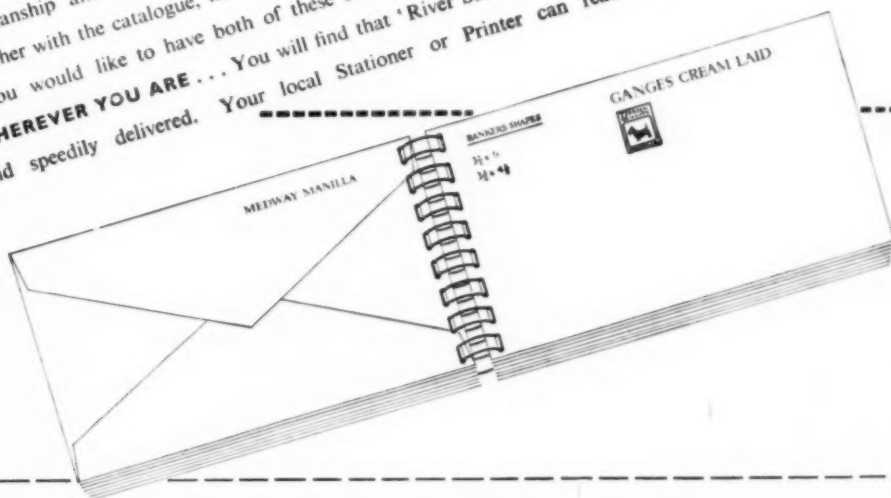


Cooling units arrive on the roller conveyor (left) for test running in the bays on the right.

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Making Office Procedures Simple and Effective

If managements are to avoid costly mistakes in invoicing, wages, stocktaking, costing, etc., they must ensure that employees know and use the correct procedures. Broadcasting instructions is not enough; steps must be taken to see that they reach the right people, are read, understood and carefully filed for reference. A recent American book explains practical ways of implementing and maintaining a rational procedure programme. This article summarizes its recommendations, which are applicable to large and small firms in this country.

THE value of office procedure manuals lies in their use, rather than their production. The first and most important step is for management to overcome the resistance of employees to reading, believing and observing the instructions issued to them. The best way to achieve this is to make the manuals readable and attractive in appearance.

A new American publication¹ describes practical methods of producing manuals, and the more important points are described here.

Some of the advantages obtained by using a properly planned and supported procedure programme are given in the box below. Small businesses can achieve these advantages just as well as the larger organization; in fact, they need them more, for the smaller

firm can less afford to make mistakes in invoicing, buying, wages, etc.

Since manuals are often prepared section by section and need frequent revision, the best way of distributing instructions is on a standard loose-leaf form; these can be bound as they are received. The sheets normally have a printed heading, and this should be simple, but balanced and attractive. The minimum number of headings compatible with control, distribution and identification should be used. Most headings can be produced on an office duplicator—very simple ones on a typewriter.

The headings that may be included on a form are:—

- *1. Subject (of the procedure).
- *2. Procedure number.

- *3. Date (a) of origin (b) of initiation.

- 4. Other procedure, etc., superseded.

- *5. Authorization (if possible initials of head of each department affected—this gives personal touch).

- 6. Distribution—persons in each department that should receive certain types of instruction are grouped and given a code number. This number is entered on each procedure.

- 7. To whom it applies—departments preprinted and selected with crosses.

- *8. Page number in top right-hand corner. Best written "Page x of y" (y = manual number).

- 9. Forms needed to implement the procedure. Examples or facsimiles, filled in, should be included.

- 10. Forms made obsolete by new procedure.

- 11. Revision. Indicate parts of procedure that are new or revised. This saves readers' time.

All these headings are not essential on all forms. But those marked * should always be included.

The size, colour, type and weight

¹How to Make a Procedure Manual. H. John Ross, Office Research Institute, P.O. Box 4099, Miami 25, Fla., U.S.A. \$4.50.

What a Procedure Manual Can Do

1. Ensure compliance with company policy.
2. Provide uniformity in practice.
3. Reduce operational errors.
4. Shorten training period for new employees.
5. Simplify interchange of employees between jobs.
6. Avoid snap decisions about systems changes.
7. Eliminate oral procedure instructions.
8. Prevent anything being left to chance, hearsay or individual (and varying) interpretation.

of paper to be used, the method of reproduction, and how the procedures are to be bound or filed, is the next stage.

Odd sizes should not be used for the sake of individuality; they have too many outweighing disadvantages. Coloured papers and inks may give poor contrasts and cause eyestrain. Black ink on white paper is best. Heavy paper is more durable and eliminates annoying "show-through," but it has greater bulk. Coloured covers help the manuals to stand out on a shelf. Coloured labels or blocking of the title, company's name, or a numeral or letter serve the same purpose.

Unless covers are easily manipulated, the procedures and their amendments and revisions will not be filed regularly, and the manuals will not be kept up-to-date. A ring binder with a large number (14-22) of rings, or a post binder of the type where the cover can be removed by pulling a ring and operating a clutch, is recommended. Whatever type is selected, the essential thing is that pages can easily be inserted and removed without the danger of the remainder falling out or getting disordered.

Layout of pages, selection of type styles and sizes, are factors that affect readability and therefore the impact of the procedure. Of ordinary typewriter faces, the author prefers pica to elite, and recommends a clear-cut, even-stroked style. Although the ingenious use of a typewriter can give considerable variety to headings, text, etc., a machine such as the *Vari-Type* (see *BUSINESS*, page 68, June, 1952) is much more flexible and allows layouts to be more interesting and attractive.

Correct margins are just as important as good, clear type. Typed lines are difficult to read if they

least a lin. margin should be allowed at the top of the page and 2ins. at the bottom. Besides improving the appearance of the pages, these margins allow notes (e.g., "Revised") to be added, and should a single sheet need amending, it is often possible to include the amendment without reprinting more than one page.

What actually goes into a procedure depends, of course, on the operation being described. But a common aim is to "write so that the reader not only may, but must, understand." To achieve this, there are certain basic rules. The author must—

1. Think clearly.
2. Express himself simply.
3. Make his matter interesting.

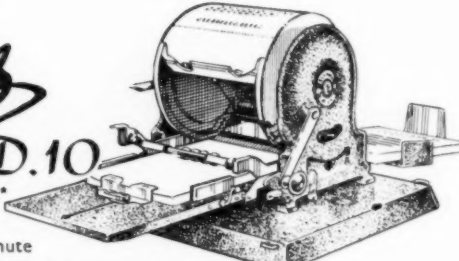
Many would-be instructors are content when their wording is comprehensible to themselves. But their readers may be less intelligent and much less familiar with the operation being described. Therefore: use words with which the reader is familiar; use short sentences (of up to 20 words); use active (action) verbs, instead of passive ones; do not introduce several thoughts or ideas in the one sentence.

Specific styles to avoid are the

"Employee use of procedure manuals is in direct ratio to their ease of use and accessibility."

are more than six inches long. On a page 8½ins. by 11ins., this leaves 2½ins. for margins. One inch should be left on the outside edge and 1½ins. in the "gutter." A wide gutter is invaluable when the manuals are thick and are housed in fixed bindings, for it allows the whole line to be read easily. At

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imperious "you will, or shall, or must, etc., do so and so." Requests, not commands, should be the rule. An active verb often carries more authority than a direct command because it assumes compliance; e.g., "Change the estimated requirements only when authorized by the sales office" is just as forceful and less imperative than "You will not change the estimated requirements without the authorization of the sales office." Having adopted a style, use it consistently. But telegraphic language and too short, punchy sentences can impair readability by destroying the thread of a thought or idea. The book is well illustrated with examples from actual procedures showing good and bad styles in contrast.

Human Interest

Other ways of increasing reader acceptance are to introduce human interest, and to give the reasons why certain actions are necessary. "You will need to maintain these records so that you can compare them with your sales estimate and thus make proper adjustments" is

more reasonable and acceptable than a bald statement like "These records must be kept up-to-date."

Once the manual has been written, it is important that the information is grouped in an accessible way under a logical system of chapters, paragraphs, etc. There are several methods of grouping according to subject, departments concerned, forms used, operations necessary, etc. Several specimen systems are outlined in the book.

Another essential is a comprehensive index of contents, adequately cross-referenced. A master index for all manuals should also be compiled and kept up-to-date to facilitate finding the correct procedure when it is required.

Finally, the book discusses different duplicating methods. For a few copies a typewriter will do; for up to a few hundred a spirit duplicator is adequate; whilst for larger runs a stencil duplicator or offset-litho machine is required. The quality of reproduction, of course, varies with each equipment, as well as the quantity that can be reproduced. Whichever method is adopted, one device that can save time and give better re-

sults is the pre-printed master. Headings, columns, etc., are imprinted on each master by the manufacturers. Not only does

BUSINESS TO PREVIEW SCOTTISH EXHIBITION

The second 1952 Business Efficiency Exhibition at Glasgow will be covered in a special preview supplement in the November issue. This supplement will not only be of value to executives visiting the exhibition but will prove to be a useful and permanent guide to modern office equipment.

The exhibition will be held at Kelvin Hall from November 4-14.

this avoid repetitive work on each stencil or master, it also eliminates the need for registering type matter, etc., on pre-printed forms.

The book itself is an admirable advertisement for its contents. It was set up on a Vari-Type machine and offset-litho printed. It obeys all its own rules on margins, is strong and simply bound, easy to consult and, above all, very readable. A large number of illustrations and samples are a further help to the reader.

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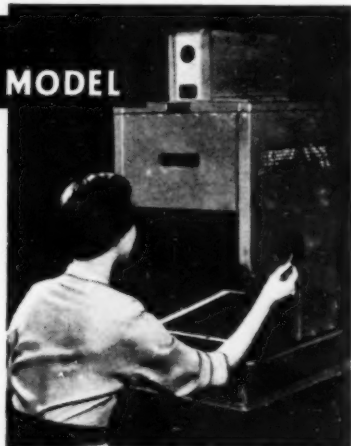
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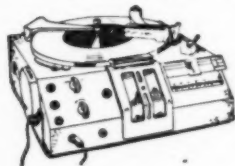
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EM38

A COMPLETELY NEW METHOD of Posting SALES AND PURCHASE LEDGERS with STATEMENTS and JOURNAL

Here is a new—quite new—method of Saving Clerical Labour.

It is applicable to several clerical routines, such as Sales and Purchase, Wages, Stocks, Hire Purchase, etc. But let us exemplify the method in connection with Sales and Purchase ledgers . . .

All ledger accounts can be maintained on the *visible* loose-sheet principle with overlapping visible edges—in either alphabetical or account numbered order. 600-750 of such ledger sheets will go into one slim binder.

Each account has its statement above the ledger sheet—perforated ready to tear off and send out.

When a debit or credit is to be posted, a metal-cored plastic panel, *with* the journal sheet attached, slots into the binder, holding it firmly in alignment.

Now—the *one* posting of a debit or credit automatically goes through on to the *three* sheets . . . the statement, the ledger *and* the journal sheet.

What has been achieved ?

First, all the three sheets are *together*. You do not have to *find* the ledger record and relate it to the statement or journal.

You see *any* account *at once*. The eye picks it out. There is *no* need to *search* for it.

Because the one writing does three postings there is one-third of the clerical labour, only one-third potential of error one-third cross checking.

Statements are *always* ready to send out—without bottlenecks—on any day of the month.

Attention is drawn to overdue accounts by a visual signal.

PROVED figures are daily available for posting to the Control account.

May we tell you more about this new method or *show* you it ? Just jot "Visible and Multiple Records" on your letterheading and full information will be sent by return.



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Streamlined Figuring

FULLY automatic, as the name implies, the *Hamann Automat S* is a much improved version of previous models of this German-made calculator.

Whilst the external appearance has been streamlined and modernized a number of mechanical improvements has also been incorporated.

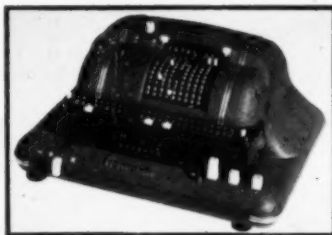
Most important of these is the single key which now controls the operations for both multiplication and division; after each calculation the carriage returns automatically ready for further operation.

Automatic short-cut multiplication is another feature of the machine. This cuts the revolutions required for a calculation by 40 per cent. and saves time and wear and tear. When multiplying, the machine finds the shortest way by means of mechanically chosen plus and minus turns. For instance, a sum with the factor 99,999,999 is figured in two revolutions instead of 72. Factors are entered direct into counting and setting registers.

Division is automatic from the time the key is touched until the carriage returns to its basic position at the end of the calculation. Dividends are set direct into the result register and divisors into the setting register.

Easily handled setting levers, visible check register, and automatic clearance are features which simplify addition and subtraction.

Capacity of the *Automat S* is 9 by 8 by 16 columns. Intermediate results can be left in the



Attractively restyled calculator.

machine and used for further calculations without resetting.

All figures are large, clear and closely grouped for ease of reading. Controls are few, clearly marked and simple to operate.

The machine is powered by a universal electric motor suitable for all voltages from 100 to 240 a.c. or d.c. Dimensions are 13ins. by 10ins. by 6ins. and the weight is 23lb.

Enquiry Ref. No. O.10/1.

Long Talk

DEVELOPMENT in tape recording that has important implications for certain types of offices is a multi-track machine that can automatically record for periods of up to 48 hours.

Some applications of the new machine are monitoring telephone or wireless communications, taking down telephone messages if no one is in the office, recording complete conferences, training courses, etc., and taking "notes" of a lengthy experiment or test (e.g., a pilot's reactions as he flies a new plane).

Most remarkable thing about the appearance of the recorder is its small size; it is less bulky than many normal tape recorders and measures only 12ins. long by 10ins. high. The weight is less than 20lb.

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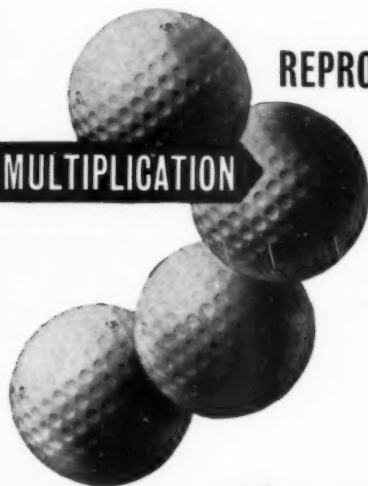
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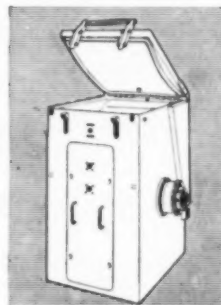
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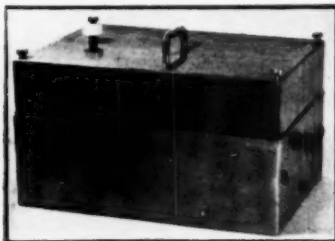
MERVAC

Tisbury's

OCTOBER, 1952

95

Two units make up the recorder: the base which contains the amplifier, volume controls, relays, switches, etc., and a cassette which holds the spool of tape, the recording head and the channel selection control. This cassette is a self-contained unit for continuously recording for either 12,



The 48-hour recording cassette is here seen clipped in position on the base.

24 or 48 hours. It fits on top of the base and all electrical and control contacts are automatically made. When the cassette is exhausted it is unclipped and can be replaced instantly with another.

Playback can be arranged either through headphones plugged into the machine or via a special play-

back unit that is fitted with foot controls, back spacing, etc., to aid transcription.

Standard half-inch tape is used and 12 or 24 side-by-side channels are recorded according to the running time required. The tape is arranged to run as a continuous loop and holes punched in it operate a relay which moves the tape to the next channel position, after a complete revolution.

Although the quality of recording is as good as a normal commercial radio receiver, the machine is only claimed to be suitable for speech.

Selecting the different channels (each channel is one hour's recording) can be carried out rapidly with a simple knob. The only other controls on the machine are the on/off switch, a pre-set volume control and a manual volume control.

Two models of the machine are available. One operates off mains voltages and the other uses a 24-volt power supply. A carrying handle is provided and the standard finish is smooth grey enamel.

Enquiry Ref. No. O.10/2.

Light Traveller

REASONABLY priced, neat in appearance and sturdy in construction is the new *Traveller*

portable typewriter. The name is appropriate, for the machine measures less than 12ins. square, is 3ins. high and weighs only 9lb.; complete with case it can easily be carried in a brief-case.

Non-glare plastic keys are fitted on the standard keyboard of 84 characters. There are two shift keys, a back spacer and automatic ribbon reverse.

Other features of the *Traveller* are: strong one-piece frame, speedy escapement, variable three-line spacing, card holder, standard size platen and quiet carriage return.

Enquiry Ref. No. O.10/3.

Certain Posting

SO original is the new *CertoPost* system for ensuring the accuracy of ledger postings that it is scarcely an exaggeration to call it revolutionary. The system is built around a basically standard non-listing adding machine with a 12-column keyboard. The only difference is that each digit in the answer dials on the *CertoPost* machine has a code figure in red engraved beside it.

This code forms the basis of the system and enables mistakes made in ledger posting under the four

For many years the Cox Organisation has been producing tubular steel seating for all purposes and their products range from seating for the automobile industry to tip-up seating for theatres and cinemas. Their recent achievements in the latter field include the manufacture of the auditorium seating for the Royal Festival Hall, London, and the re-built Free Trade Hall, Manchester. Their products also include a range of seating for commerce and industry and the example illustrated is executive chair model OW.171. A complete range of chairs for clerical staff is available and full particulars and catalogue (reference D) will gladly be sent on request. Note should be made that Cox also manufacture a large range of chairs and tables for canteens and staff restaurants. Please write for catalogue (reference E) which gives full particulars.

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TYPEWRITERS

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following headings to be detected as soon as the errors are made:

- (1) Wrong amounts entered in the ledger.
- (2) Amounts posted to the wrong account.
- (3) Postings made to the wrong side of the ledger.
- (4) Incorrect balancing of the account.

None of these errors is revealed by the usual Trial Balance check of ledgers.

Though complicated to describe in detail, the code is in fact very simple in operation. According to a carefully prepared system, all the information to be posted is converted into numerals—one figure for each digit and letter. There are only 156 variations, yet duplication or errors of transcription are impossible. After the required posting has been entered on the machine, the total of the red code figures is taken horizontally and this total becomes the Accuracy Check Figure (ACF) of the posting. The ACF is inserted on the original posting docket and wherever the amount is posted the ACF must go as well.

Whilst the code is simple in operation, it is far from simple arithmetically. It takes a highly-skilled mathematician to discover

the relationship of the figures in the code, so the chances of a ledger clerk being able to manipulate postings is almost nil.

The ACF serves to detect errors in the following way. When posting to the ledger the ACF, plus the code of the folio (permanently displayed on the sheet), is entered in the code column opposite the debit or credit posted. The system provides that at any time the code of the money balance plus the code balance (total of the ACFs) must come to a multiple of 13. If this is not so an error has been committed under one of the four headings already mentioned. Immediate steps can thus be taken to correct this. As well as serving

to reveal inaccuracies, the system also ensures that all accounts are permanently in balance.

The system is equally applicable to hand-posted ledgers with or without carbon proofs and to machine-posted ledger systems with proof sheets and running balances. In the latter case the *CertoPost* method closes any remaining loopholes and proves that balances are correctly picked up.

Alterations to ledgers, forms, etc., already in use are not called for since the only extra required is a column to take the code figures. So simple is the system that even junior staff can operate it after half an hour of practice.

Enquiry Ref. No. O.10/4.

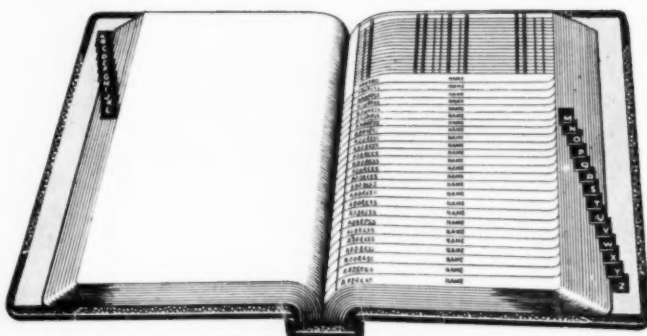
Another National Business Efficiency Exhibition BUSINESS to Preview Latest Office Equipment

With next month's issue *BUSINESS* will publish a special supplement devoted to new office machines and equipment to be shown at the Glasgow Business Efficiency Exhibition.

Included in the supplement will be a complete list of exhibitors in alphabetical order, and a lavishly illustrated guide to the products which will be on display.

The exhibition will be held at the Kelvin Hall, Glasgow, from 4th-14th November.

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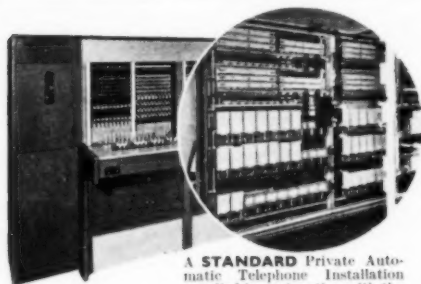
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ONE company in a well-known group has installed a slip system of sales ledgers. In this particular company the average period between orders exceeds three months, and approximately 95 per cent. of the payments are for the exact amount shown on the invoices. The system used is as follows:—ledger copies of the invoices are sorted in ledger group order, and group totals are posted to a control account. Copies are then filed in Universal binders to form a ledger. When payments are made, copy receipts are pinned to the relative invoices which are extracted from the binders and filed away in customer order. There is no writing up of the debit or credit. The actual accounting process is narrowed down to the

writing of the control totals, and a periodical listing of invoices held in the binders. Two special points in the system are: (1) paid invoices are kept on the ledger clerk's desk until the balances and the relative groups have been proved by listing; (2) when paid invoices are removed from the ledger binders, the holding mechanism of the binder is not opened; to save time the invoices are simply pulled off the binder posts.

Fire Drill

THROUGHOUT all buildings of a large London firm there are fire bells installed. Should a fire start in one portion of the building the bells operate throughout but they indicate the location of the fire. This is done by signalling the department number

when ringing the fire bell. Thus, pip pip . . . pip pip pip . . . indicates that there is a fire in 23 Dept. at the end of the block on the ground floor and the code will make this immediately apparent to the internal fire brigade and to the staff in other parts of the building.

Points to Remember

HERE are four points to remember when setting out to improve office methods:—

(1) Do not attempt too much at once. Take a section of work at a time. To attempt to achieve too much may mean failure to achieve anything.

(2) Use visual methods to demonstrate as far as possible—charts, specimen forms, actual machines, etc.

(3) Whenever possible, show the savings in money which are estimated to result from a new procedure, but make sure that the estimates are realistic.

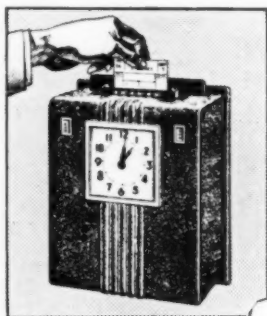
(4) When introducing a new system or procedure, obtain and welcome as much criticism as possible from those with an intimate knowledge of the work.

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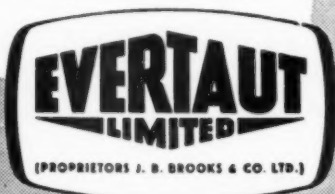
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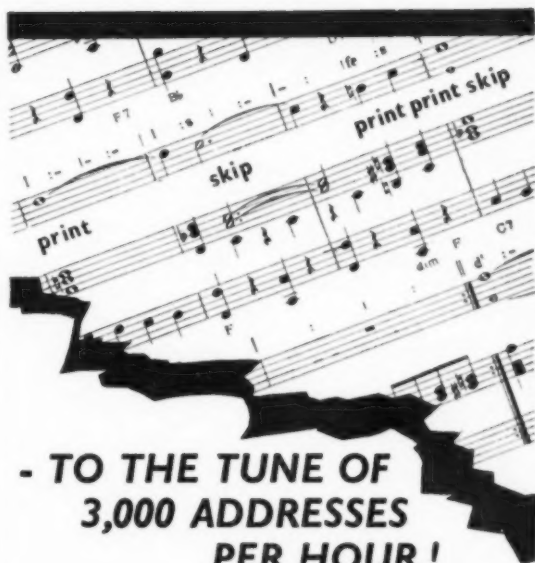
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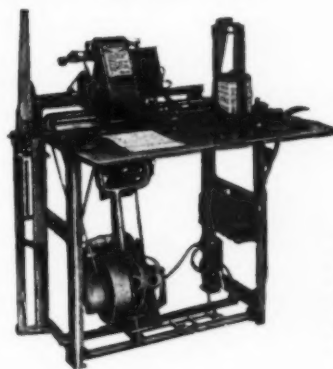
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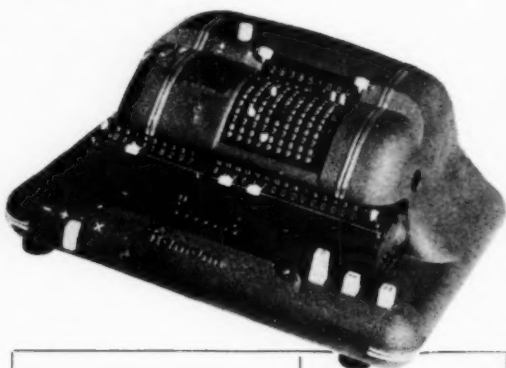
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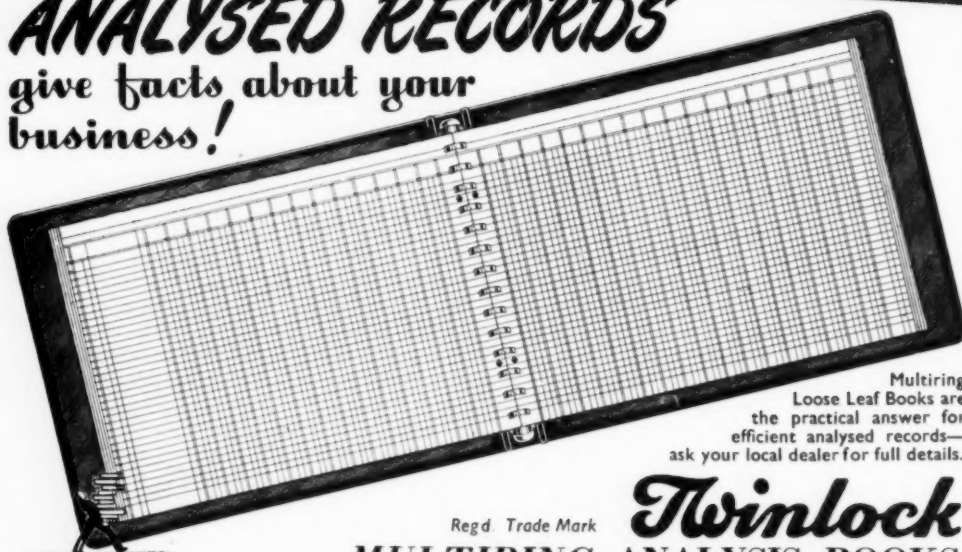
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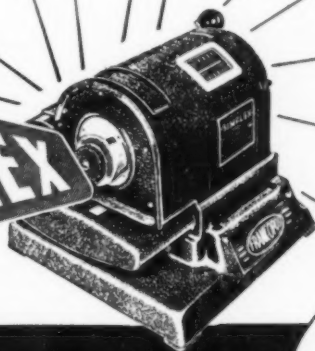
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SIMPLEX - Eliminates
Postage Stamps and the
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SIMPLEX - prints YOUR
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narrow gauge motion
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"I used to hate dictation—left me no time at all for all my other jobs—in fact I thought I'd turn it in. But it's different since we've had a Dictorel. I saw one of their advertisements and put it to the Chief. Now the work goes with a swing. The Dictorel is marvellous, no fiddling with wire, discs, tape or belts, just a sheet of standard size, magnetised paper (called Dictograms) slipped in as with a typewriter. Everything streamlined and so easy and efficient. Now I'm on top of my work and the Chief's as happy as I am."



NOTE TO EXECUTIVES

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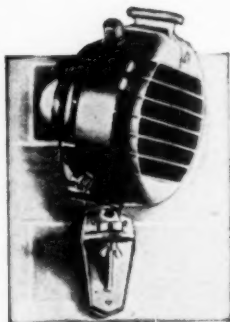
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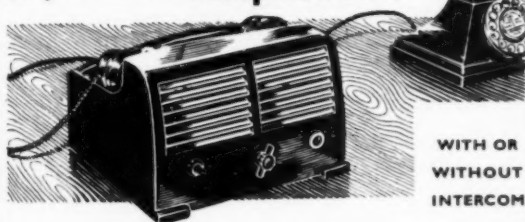
This modern steam Heating Unit provides comfortable warmth **rapidly**, and is ideal for offices, board rooms, canteens, etc. Motor driven fan—ensures even heating throughout the room and eliminates cold spots. In hot weather fan can be run independently to promote circulation of cool air. The 'SPIRALUXE' is smartly designed, sturdily constructed. Also available for electricity (2 or 3 kw.) Guaranteed for 18 months. Write for List B.97.

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THE BRITISH VACUUM CLEANER & ENGINEERING CO. LTD.
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Basic materials get taken for granted, and sometimes valuable new applications get overlooked. Here are five recent developments concerning rubber which involve such different things as textiles and roads. They are of interest to the executives of many industries.



The Positex-treated sock on the left retains its shape; the other has shrunk.

This road at Preston, Lancashire, has been impregnated with rubber powder for longer wear.



Five New Uses for Rubber

By M. RALPH HORNE

THERE are few important industries in which rubber is not used in one form or another; many of the more common applications are well known to industrialists. Some of the latest uses throw a new light on this versatile material and five of them are described here. They are important to the executive who may be able to exploit them for his own range of products.

Rubber and Textiles. Unfamiliar to many is the relationship of rubber to textiles—woollen goods

in particular. The application of rubber to wool fibres substantially increases wearing qualities, reduces shrinkage to a negligible quantity and prevents felting, the last named being a well-known characteristic of woollen garments, particularly when they are worn next to the skin.

If wool fibres are dipped in diluted latex, they have no affinity for the rubber. This is because normal latex is negatively charged and it is necessary to change this to a positive charge before the rubber will form a deposit on the wool fibres. The point is immediately demonstrated if two hanks of wool are treated, one being immersed in an alkaline bath containing normal latex and having a dry rubber content of 0.75 per cent. The second bath is similar except that the charge is reversed. Latex of this type is marketed under the trade name of *Positex*. The hanks are kept moving gently, either by hand or mechanical means, and after a short interval the liquid in the *Positex* bath becomes water clear, the rubber having all been deposited on the fibres, whereas the bath containing the untreated natural rubber latex remains unchanged.

The treated hank is almost impossible to detect, both the "feel" and appearance are that of normal wool. These facts are due to the deposit being in the form of what

chemists term discrete particles, as distinct from a continuous film.

This process offers several advantages to manufacturers such as ease of drying after processing, freedom from sticking and a material gain in tensile strength. The last named is due to the binding effect upon the fibres which prevents them slipping over each other and is also the reason why wear is retarded and felting prevented.

Large scale trials produced interesting results and one of the most striking was the lack of shrinkage. Shrinking is caused by movement of the fibres and this the rubber prevents by acting as a flexible binding agent. Air permeability, water absorption and desorption remain unchanged, moreover the rubber has no water-proofing effect because there is no continuous film of rubber. Another application of this process is for carpets which become more wear-resistant.

Since rubber provides an invisible binding medium for fibres it makes possible the production of felts from non-felting materials such as cotton, jute and other fibres. These felts are not water-proof but retain all their normal qualities and, in particular, they are springy and do not lose shape.

Anyone may use *Positex* under payment of royalties provided it is obtained from a firm licensed to manufacture and sell it by the Wool Industries Research Association and the British Rubber Producers' Research Association, who are the joint owners of the patents.

Metal Protection. A latex coating of a different kind has been developed at the British Rubber Producers' Research Association Laboratories, Welwyn Garden City, in conjunction with Dr.

Vernon, of the Chemical Research Laboratory of the Department of Science and Industrial Research, Teddington, with a view to protecting machinery and bright finished metal parts from rust. Many coating solutions have been produced for this purpose, but some of these call for a hot melt and solvents in order to remove the coating that has been applied. Paint, too, is unsatisfactory, for it takes both time and care to clean it off thoroughly. Grease and oil lack the necessary mechanical qualities and, in any event, they are not permanent.

In contrast, rubber films can be applied quickly, possess the required mechanical qualities and are easy to strip off. A 60 per cent. latex solution is used to which

small quantities of compounds such as sodium benzoate and sodium nitrite may be added. If the self-adhesiveness of such a film is too great, then pre-vulcanized or vulcanizable latex can be used.

Brightness Undimmed

Tests using bright mild steel for the most part have been made in water-saturated atmospheres at room temperature. After 12 months of this treatment the coating was stripped off and the metal showed no signs of deterioration, whereas similar untreated specimens were seriously corroded within three weeks, due solely to lack of protection to corrosive elements in the laboratory atmosphere. Further trials under extreme tropical conditions were carried out in Malaya with equally satisfactory results.

Paint and Rubber. Many tests have been carried out by official organizations, such as the British Admiralty Corrosion Committee, and have pinpointed the pre-eminence of paints having a chlorinated rubber base. Whilst impartial investigators were primarily interested in the corrosive action of sea-water, the application of paints of this kind is far wider. For example, there are

Rubber Report

RUBBER COATED TEXTILES

Have increased wearing qualities, reduce shrinkage, prevent felting.

RUBBER PROTECTION OF METAL COMPONENTS

Stops rust and corrosion, is easy to apply and strip off.

RUBBER BASED PAINT

Protects steelwork, machinery, ships against sea water, steam, fumes, etc.

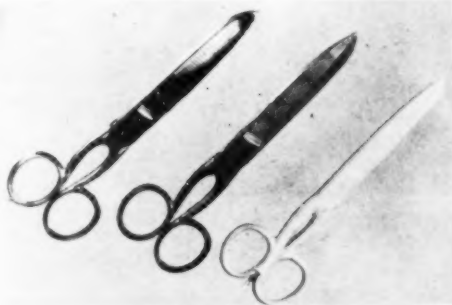
RUBBER THAT CONDUCTS ELECTRICITY

Can be used in heating panels located in walls, ceilings and floors.

RUBBER-ASPHALT ROADS

Last longer, require less maintenance.

Latex protected the two outer pairs of scissors from three weeks' exposure to damp.



many manufacturing processes which produce fumes and these, combining with rainwater or due to moisture from other causes, quickly play havoc with unprotected steel against which normal measures are impotent for any considerable period.

Electricity-conducting Rubber. After many years of experimental work a rubber has been compounded which conducts electricity. The U.S. Rubber Co., and the Goodyear Tyre and Rubber Co., Ltd., have been prominent in its development. The manner in which one of the most important characteristics of rubber has been reversed is due largely to the addition of a special type of carbon black. The result is to form millions of submicroscopic electrical paths which are spaced so closely that they create a conductive area which is completely uniform. When electric current is passed through the rubber, resistance is caused and heat generated. In this manner independent metallic heating elements embodied in the rubber are rendered unnecessary, although the lead-in is usually to a pair of thin metal strips at opposite sides of the rubber sheet,

which alone forms the heating element. Even these strip connections are not essential and a simple link directly on to the rubber is practicable.

Invisible Heat

The stage of development just described had been reached just prior to the war, and in time to use rubber heating panels for explosive factories erected during that period, and also where the handling of volatile liquids created above-average fire hazards.

Thus, buildings need have no visible form of heating equipment. The panel heaters—at any rate in rooms of small or moderate size—can be placed in the ceiling. Radiant heat given off causes the floor to be the warmest area next to the panel itself. On the other hand wall or floor panels are equally feasible.

Rubber Roads. A further development in the application of rubber, but one that is likely to be of far-reaching importance, is the inclusion of rubber powder in asphalt and bitumen for road surfacing purposes.

Experiments were initiated in Holland 15 years ago. A number of test strips were laid down having various asphalt-rubber mixes and these were alternated with strips of standard surfacing between each experimental length. Development came to a standstill during the war, but the test sections of highway were subjected to a tremendous punishment from military traffic. At the present time some of the rubberized surfaces are still serviceable, whilst those strips laid in a conventional manner have been replaced.

During recent years rapid strides have been made with rubberized road surfacing in various parts of the world. In August, 1950, an experimental section was laid on the Leeds-Selby road. This comprised a spraying grade of bitumen containing *Mealorub*, which is a powder of natural rubber. The surface dressing was supplied by Crowley, Russell and Co., Ltd. Within 12 months the experimental section had proved its merits so conclusively that the Leeds Highway Authority placed an order with the firm mentioned for 10,000 gallons of similar binder.

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You'll find that Lamson Mobiles are handy models to have around—handy for handling a hundred different jobs, handy for moving to the spot where they are most required. On any loading or stacking job two men with a Lamson Mobile

Conveyer can do the work of a whole team without. May we send you further details? Write to Dept. "D".

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Specially designed for the transport of iron ore from new fields in West Africa and other overseas sources, the M.V. "Orelia" will carry an average cargo of 8,400 tons of this valuable steel-making, fuel-saving material.

This is one of fifteen ore ships to be ordered as part of the steel industry's post-war development plans begun in 1946. Their cargoes will help to feed the six new blast furnaces which British firms are bringing into operation during the year in this great expansion programme. The extra pig iron produced in these new furnaces will increase Britain's annual output of steel by three-quarters of a million tons.

"KEEP ME MOVING!"

SAYS



JACK SCRAP

The steel industry still needs all the scrap which engineering firms and other steel users can send back. Search out every ton of scrap on your premises. Your local scrap merchant will help with dismantling and collection.

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STEEL HOUSE, TOTHILL STREET, LONDON, S.W.1

S.33

Survey of Modern INDUSTRIAL EQUIPMENT

HEATING EQUIPMENT

Stored Heat

USEFUL device for heating out-buildings, etc., where electric current may not be available is the *Airflo* thermal storage heater.

The heater depends for its operation on a specially treated form of soapstone which is called *Copestone*. This material has the property of retaining heat for a considerable period.

In the *Airflo* heater a sheet steel outer case, insulated with glass wool, encloses a pair of air ducts. Packed around these ducts is the *Copestone* material and inside each is an electric heating element. When plugged into the mains these elements transfer heat to the storage material. When fully charged the heater can be removed

and will then dissipate its heat into a room over a period of up to 15 hours.

A control valve allows the rate of discharge to be varied. With this control closed the *Airflo* radiates heat. When opened it discharges a stream of hot air and acts as a convector as well as a radiator.

Three models are available, rated at 1.5, 3 and 4.5-kW, respectively. The smallest model measures 21ins. by 15ins. by 28ins. high.

Enquiry Ref. No. F.10/1.

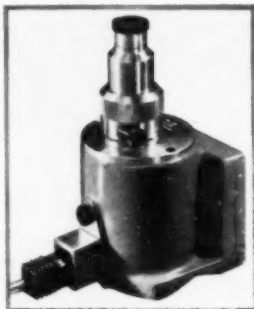
INSTRUMENTS

Shake Detector

VIBRATIONS originating in unbalanced grinding wheels or motors, slack bearings, loose driving belts, faulty foundations, etc., can be dangerous if they exceed

certain limits. A simple instrument is now available that enables vertical or horizontal vibrations to be quickly and accurately measured, whatever their source. The *Sip* micro-vibrometer optically magnifies the movements of the instrument compared with an inert suspended mass. The movements appear in the graduated eyepiece of the microscope incorporated in the instrument, as bright strips of light. Direct readings can thus be taken.

Vibrations of from 7 cycles per second to infinity and varying in amplitude from 0.00008 to 0.012ins.



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*This Flexello catalogue shows you that...
where there's a wheel
there's a way*

...a way to augment and improve your own mechanical handling methods... and a way to improve products carried on wheels or castors. FLEXELLO offer you a choice of no less than 200 different types, each designed by specialists to do its particular job particularly well. Send for the FLEXELLO Catalogue; it is a really helpful reference book that should be in the hands of every factory manager.

Flexello

ENGINEERED CASTORS & WHEELS

run miles more easily



Mobilise your bins

Bins for components, waste and scrap are better on castors. Less production time lost in renewing supplies. Wheels of iron, hard rubber, or cushion tyres to suit any floor and any load can be chosen.

Ball Bearing Swivel 4" hard rubber wheel with hard or soft tread. Thread-guard.

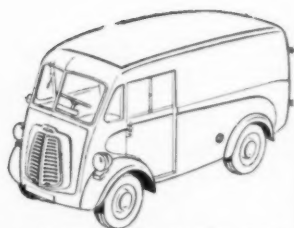


Precision Roller Bearing Swivel with 8" anchored cushion tyre.

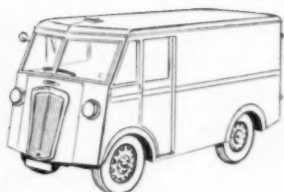


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Manufacturers in Europe

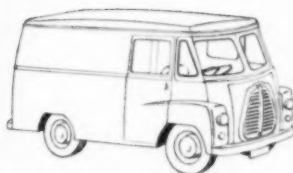
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10 CWT EXPRESS DELIVERY VAN

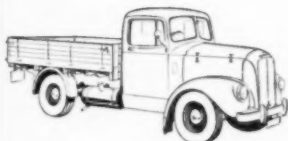


15/20 CWT VAN

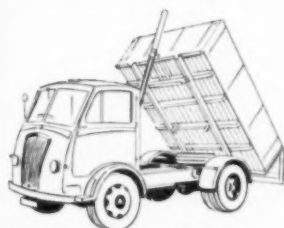


1 1/2 TON VAN (EXPORT ONLY)

**A
VEHICLE FOR
EVERY JOB
— and built
for the job!**



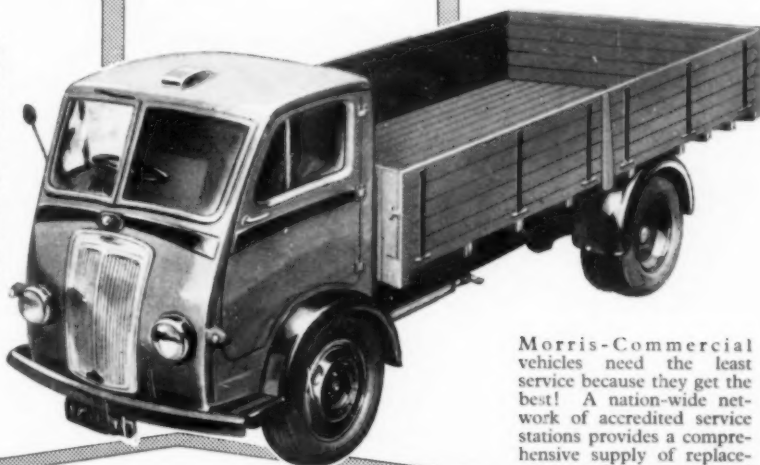
1 1/2, 3, & 5 TON TRUCKS



5 TON TIPPER

The Morris-Commercial range not only covers most transport needs but each vehicle has been designed, after a careful study of its owner's requirements, down to the smallest detail. They have in common a stamina that stands up to the toughest conditions of work and a reliability that keeps them earning longer than most others.

5-TON
TRUCK



Morris-Commercial vehicles need the least service because they get the best! A nation-wide network of accredited service stations provides a comprehensive supply of replacement units, spares and maintenance by factory-trained mechanics — a service unsurpassed by any organisation in the country.

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can be recorded by the instrument. The Sip is small and light in weight; it measures 5½ins. high, 2½ins. wide, 3½ins. deep, and weighs only 26 oz. Operation is from 50-cycle mains via a transformer.

Enquiry Ref. No. F.10/2.

PORTABLE POWER TOOLS

Shoot Your Bolt

TIME and labour savings of up to 90 per cent. on certain fixing operations connected with iron and steel, brickwork, concrete, etc., are claimed for the *Rapid Hammer*. The tool literally shoots bolts into walls, etc., and eliminates drilling, chiselling and plugging.

Cartridges with a small charge of gunpowder are used to drive

the bolts, which may have plain, male or female threaded tops. Complete safety for the operator is ensured by three simultaneous safety catches and the Home Office has ruled that the *Rapid-Hammer* can be used without any special firearms licence. Cartridges of four different strengths and bolts of many sizes can be supplied.

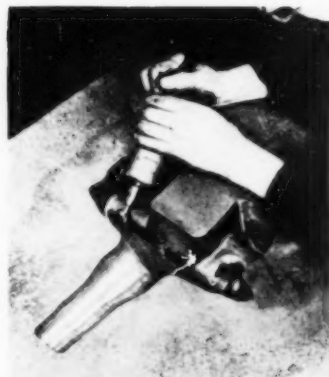
Two models are available: the Mark R.11 for bolts 0.236ins. in diameter weighs 3½lb., whilst the Mark R.111 for 0.394ins. diameter bolts weighs 8lb.

Both models are supplied in a case complete with bolts, cartridges, etc.

Enquiry Ref. No. F.10/3.

Fast Finishing

COST of finishing tool-steel dies and similar work is halved by using a new series of air-

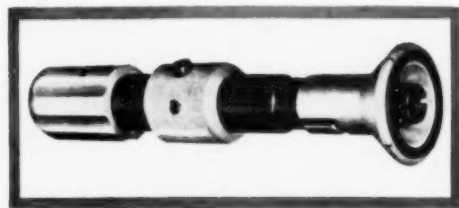


Dies are finished faster with the new tools.

operated hand tools, the manufacturers claim.

Previously the work had to be carried out by hand chipping and grinding with mounted emery points. With the new tools are used tungsten carbide cutters and files.

Polished aluminium is used for the bodies of the tools, giving them lightness and a clean appearance. Six models are available, giving speeds from 650 to 50,000 revolutions per minute. To ensure



Harmless looking gun shoots steel bolts into steel, brickwork, etc.



Type D.H.23

Cut your handling costs —

Let B.E.V. EXPERIENCE speed up production

We illustrate here the Type D.H.23 1-ton High Lift Fork Truck. This is the latest addition to the B.E.V. range of Fork Trucks, designed and built to meet the increasing demand for extra high lift.

Sturdy, compact and extremely mobile, the D.H.23 can be supplied with either solid rubber, pneumatic or cushion type tyres. It has a speed of 4-6 miles per hour and will lift one ton to a height of 12ft.

- Small turning radius reduces gangway width—increases storage space.
- Hinged fingers adjustable to pallet width without aid of tools.

- Low overall height permits negotiation of normal doorways.

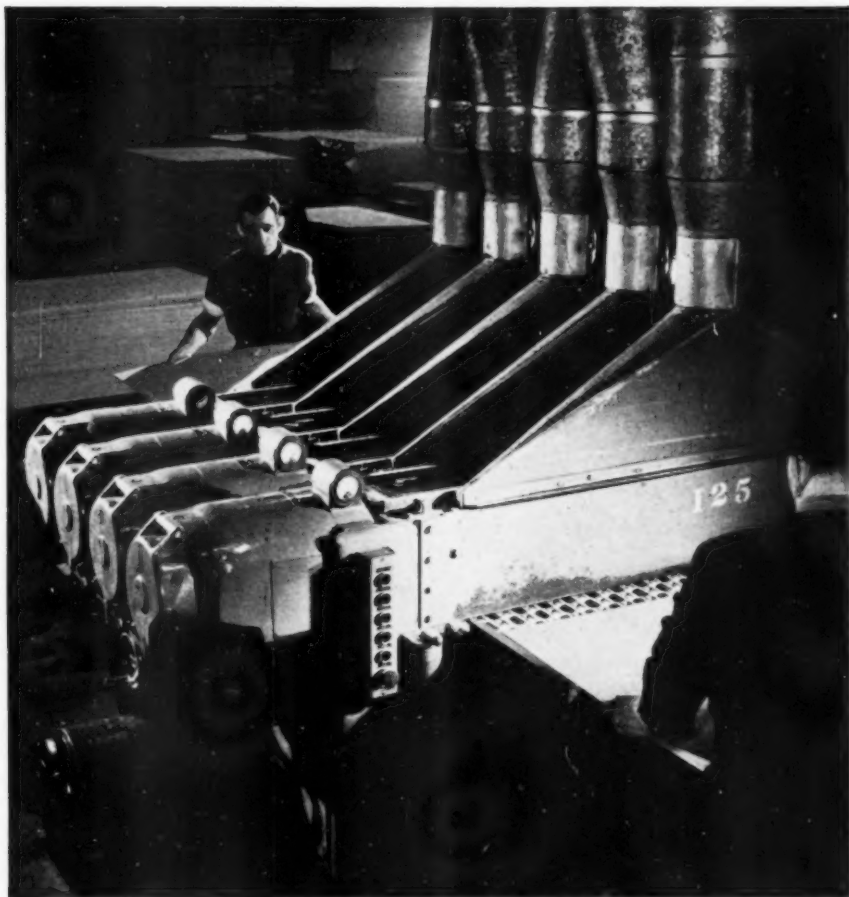
- Hardened steel strips in mast give long trouble-free life.

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accurate centring, especially important with tungsten carbide cutters, a special design of collet chuck has been adopted. Cooling of the bearings and removal of cuttings is effected by leading the exhaust air through the tools, discharging it at the chuck.

Two points that make the tools easy to use are the very soft air-hose giving great flexibility, and an automatic hose coupling that allows tools to be changed quickly without manipulating valves on the distributor pipe.

Enquiry Ref. No. F.10/4.

ELECTRICAL EQUIPMENT

Right Time

SUITABLE for use with a wide range of resistance welding machines is the WT2 weld timer. Described as a short-range electronic instrument, the device gives single-stage, non-synchronous timing of welds with non-repeat control.

In operation each closure of the welder-initiating switch starts a single weld. Alternative connections in the terminal box give a choice of momentary or sustained initiation. The control dial is divided into arbitrary divisions

and these cover a timing range of from 0.1 to 3 seconds.

The electrical circuits are so arranged that power may be applied to both the welder and the timer without the risk of prematurely closing the welding contactor. It is also impossible to initiate a weld during the warm-up period.

The WT2 timer has a cast aluminium alloy, dust and moisture-proof case. Dimensions are 9½ by 5½ by 5½ ins. overall.

Enquiry Ref. No. F.10/5.

Pictures Faults

DESIGNED to be a truly mobile inspection unit with a wide range of tube movements, the

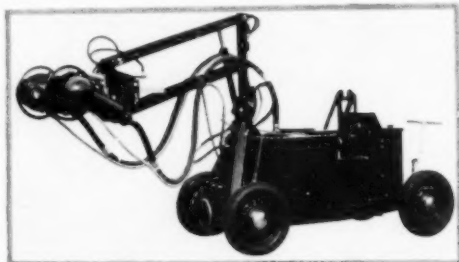
Pantak 300-k.v.p. X-ray equipment is compact and easily operated.

Usual three movements of the head are hydraulically operated from an electric pump. All three can, if required, be made simultaneously.

As the high voltage generator is housed in two tanks, it is possible to use one tank to operate a 150-k.v.p. hollow anode tube. These tubes are available up to 3ft. in length and are ideal for taking radiographs inside cylinder bores and in other similar locations. Another time-saving feature of the Pantak 300 is that a suitable target enables circumferential welds in pipes and boilers to be radiographed with one exposure.

The components can be removed

Wide range of tube movements is possible with the Pantak gantry.



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In this country now, for as little as £40, you can buy the adjectives: reliable, trustworthy, conscientious, and tack them on to a man's name.

Then, having conferred your Diploma, you can ask your man to do a job of work, and he does it. You can ask him to do 20 different jobs, at 20 different times—he does them.

You ask him to come to your factory, and to visit certain vital points several times in a night, and at different times every night. Your man will get there.

And every morning, in a few moments, you can check up, and prove to yourself, that his qualifications—reliable, trustworthy—fit him exactly. You will discover, also, that your paragon can do his work without supervision.

This is a way we have of telling you, that we are the manufacturers of a piece of apparatus which can turn an ordinary man into a good watchman; and, a good watchman into a marvel.

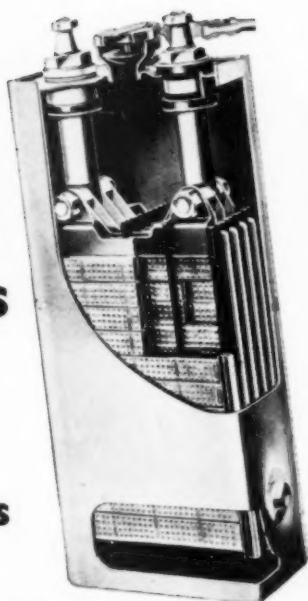
It is to tell you, that this apparatus (weighing but 6lbs.) is now being used, with great success, by some of the greatest firms in the land. On it, these great organisations base their systems of night-time security. And, they are satisfied.

Are you happy about the security arrangements in your factory? Are you helping your night watchmen to do their work efficiently? We shall be happy, and pleased, and proud to send you particulars of the apparatus advertised herein.

Write to: **BLICK TIME RECORDERS LTD.,**

HOROLOGICAL ENGINEERS, 96, ALDERSGATE STREET, LONDON, E.C.1. Tel.: MONARCH 6256/8.

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★ Steel construction for long life

★ Complete reliability ★ Low maintenance costs

NIFE

STEEL BATTERIES

NIFE BATTERIES • REDDITCH • WORCESTERSHIRE

OCTOBER, 1952



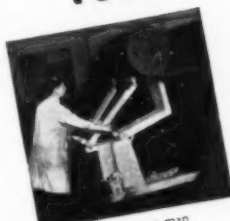
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Enquiry Ref. No. F.10/6.

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Its inclined length is 6ft. and the

maximum angle of operation is 40 deg., the delivery height in this position being 4ft. 3ins. A bitumen impregnated solid woven cotton band, 12ins. wide, is used as the carrying medium, with angle flights attached at 1ft. intervals; the sides are 3ins. high.

The *Handiveyor* is equipped with electric drive suitable for a.c. current at 380/440 volts, three phase, 50 cycles. The band speed is 70ft. per minute.

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BY redesigning the lower block of the *Lo-Hed* electric hoists the manufacturers have almost

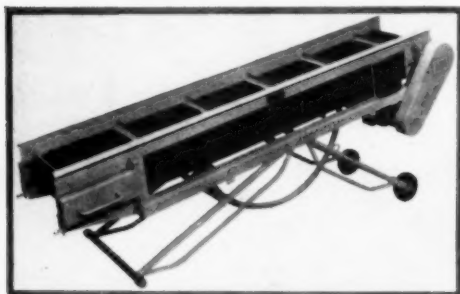


Now lifts higher than ever.

doubled their lift height for the same load at the same speed. This increase has been achieved by using two falls of rope instead of the original four.

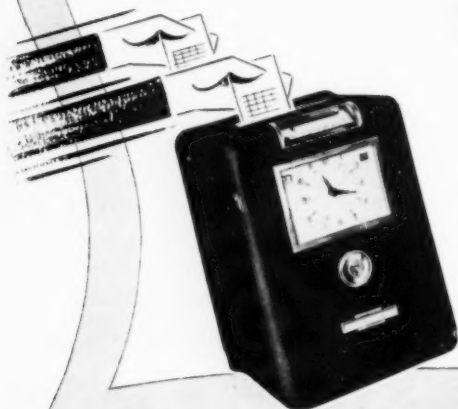
The hoists retain their low-headroom properties, twin braking systems (mechanical and electromagnetic) and the limit switch which cuts out automatically at the top and bottom of the permitted lift height.

A new feature is a rope guide



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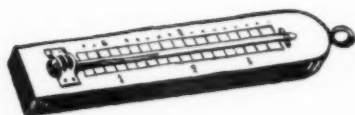
Write for full facts to Department B/N/I

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That's where refrigeration steps in. If, after "quenching", the rivets are cooled still further and kept at 0°F., the metal will remain in a workable state for several days. Refrigeration is the answer to this problem and a lot of other people's problems too!

If you've a cooling-problem, consult

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OCTOBER, 1952



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Gives close access—legs span fixed objects.

Folds to pass through doorways, gangways and into lifts.

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REGD.

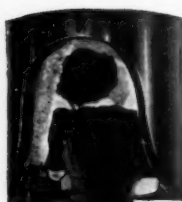
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which ensures the correct winding of the rope on its drum even if the operator is guilty of carelessness.

At present the range includes capacities up to three tons.

Enquiry Ref. No. F.10/8.

MACHINERY

Pillar Grinder

THE Tool Post Grinder, which will grind to very accurate limits, can be used for both internal and external grinding. It is driven by an a.c. or d.c. motor and is complete with a diamond steel truing device, three tools for alternative speeds, a 5ins. dia. external grinding wheel with a steel guard, and three external grinding quills.

The grinder is mounted on a substantial central pillar and can be adjusted for height and swivelled at any angle.

Enquiry Ref. No. F.10/9.

Good Form

MADE in Holland and now available to British industry is the Fokker-Eckold universal metal sheet shaper. Aluminium and copper as well as steel can be cold-formed to any shape with this machine in a minimum of time. Previously much of this work, if in short runs, has been done by hand by highly-skilled craftsmen. By means of two types of head—shrinking and stretching—the machine forms sheets to any required shape. Another advantage is that embossing of the sheet is avoided, which improves the appearance of the finished product and makes it stronger. Operating



Accurate tool post grinder.

BUSINESS



Cold-forming made easy.

at 300 strokes per minute, the machine is almost noiseless and wear on the forming heads is very slight even after continuous, intensive operation.

Maximum thicknesses of material that can be handled are: aluminium, 0.20ins.; copper, 0.12ins.; steel, 0.10ins.; stainless steel, 0.06ins. A range of shrinking and stretching heads are supplied with the machine. Power is supplied by a 2 h.p. electric motor, but a hand-operated machine working on the same principle is also available.

Enquiry Ref. No. F.19/11.

A Man of Ideas Tells His Story

Continued from page 73

firm had to pay more than it would have had to do in a bigger town.

Another factor was that certain elements amongst the workpeople—mostly ex-forces—had made peculiar demands on the management and aggravated an already difficult situation.

The public-spirited intentions which were fundamental and at the base of the business demanded steady development, but two years passed during which heavy losses were sustained.

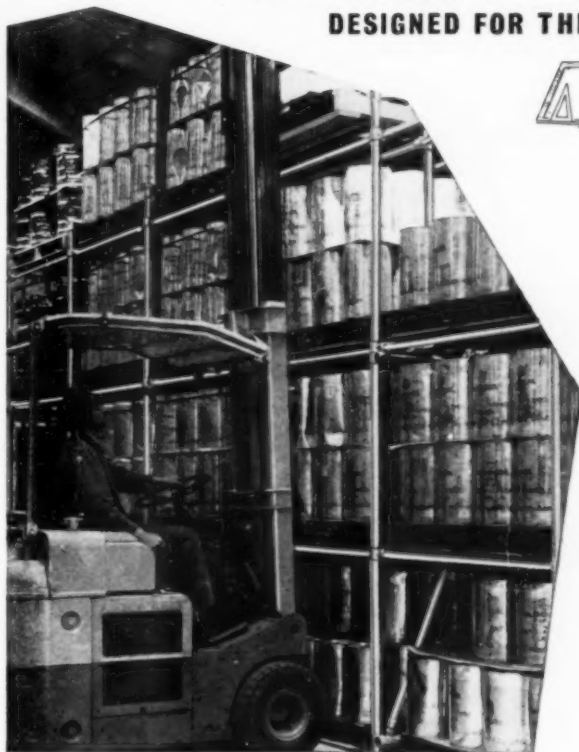
No Government-sponsored agencies were able or prepared to assist and it had been impracticable to interest others in the undertaking from the beginning, let alone at this stage.

All of this effort, enterprise and development, jeopardized by fickle

Continued on page 120

MATERIALS STORAGE & HANDLING

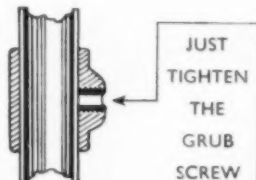
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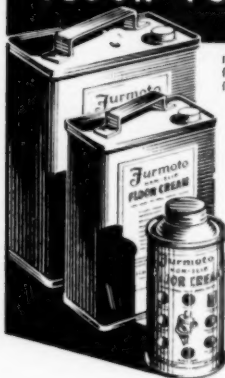
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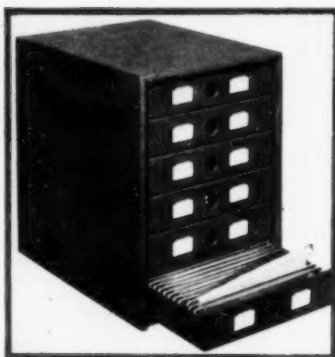


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Eltray SAVES STENCILS

Stencils are usually discarded after a single run for lack of suitable storage. With the new Eltray system they can be kept in perfect "working order" and used again and again. The used stencil is always accessible, found at a glance when a further run is required.

The cabinet is stove enamelled in wrinkle finish. Each of the six drawers in smooth eggshell grey holds 25 stencils on separate frames preserved permanently in a transparent non-stick wrapper. Single drawer units available.

Full particulars from:
ELTRAY FILING SYSTEM LTD.
10, Tottenham Mews, W.1.
Telephone: L.A.Ngham 2220.

fortune and caused by Government policies which arbitrarily cut across business planning, was to be left to perdition, or salvation by its creators alone.

Having held the fort to the very last psychological moment at the end of 1950, Mr. Blair reluctantly had to reduce his staff and work-people. This was very disappointing, but stern realism had to be the order of the day. A favourite pensions scheme was abandoned and replaced by direct incentives. Some plant and property was sold to satisfy the banks. ("Banks are fair-weather friends; they give you an umbrella when it's fine and take it away when it's wet," says Blair.) Many personal sacrifices were made and further finance obtained and injected into the business.

A 24-hour Job

During this period Mr. Blair had to spend practically all his time at Tow Law. He personally undertook on many occasions a whole host of manual jobs—black from head to foot in 24-hour efforts, and doing things which others could not or would not undertake. The eye was very much on the ball and the attenuated staff responded excellently.

It is a truism that when someone is falling there are great numbers ready to push him down. This and all else was resisted by Mr. Blair and he fought with success to a recovery 12 months later. Demands for the company's products in a changed form returned, new manufacturing methods were evolved and others were adjusted.

The firm are now busy turning out a range of important products. Well-paid adult male employment has been created with a greater potential for the days when the mines are less active. Other benefits to the community are the congenial type of employment and the public erection of many new houses which otherwise would not have been built. These things at least can be credited to the firm.

This is a story which philosophically has concerned itself with questions directly and indirectly connected with management. The story awaits other chapters for which the spring-board is now being fashioned.

BUSINESS

4-Phase System

Continued from page 85

one in which to apply these methods. Indeed the contrary is true and because of the nature of the products and processes arriving at the essential standard specifications and costs is probably more difficult in this industry than in most others.

Organon is not a large firm, employees number only 240, though this figure is somewhat misleading as much of the plant is automatic in operation. It is of note, however, that less than a dozen office workers can successfully manipulate the standard cost system and works routine in all its control aspects, nor does the system involve the departments of the factory in an undue volume of paper work. If anything, the reverse is the case.

Nevertheless, compared with most of their American and Continental competitors they are small; only the most efficient planning, control and operation of their activities has enabled the firm to survive and flourish among the giants.

Wartime Output Peacetime Sales

Continued from page 56

bility, relieves him of detail work to enable him to concentrate on overseas selling and policy-making.

"The finest thing we ever did," is his verdict on the move to Treforest. That he means it is shown by the fact that the London factory was closed down at the end of 1945; the premises are retained solely as a regional sales office. An extension of 18,500 sq. ft. was added to the original 30,000 sq. ft. at Treforest in 1949.

Chairman of the company is Mr. Arthur Cochrane, M.I.M.E., who is also assistant managing director of the Triplex Safety Glass Co., Ltd., and its associated companies. Other members of the board are Mr. H. J. Elliott, the founder of the company; Mrs. Grace M. Parker, his daughter, who has been actively engaged in the company since 1923; and Mr. Gilbert D. Shepherd, M.B.E., J.P., F.C.A., a past president of the Institute of Chartered Accountants.

OCTOBER, 1952

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Trays built to
take maximum
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freest possible
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Available in Oak
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a new velvet
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Continued from page 61

lection of dust and shoddy which may otherwise drop on the looms and spoil the cloth or necessitate picking off.

The factory has an impressive array of modern equipment, all marked off with white lines on the factory floor—still another unusual feature in textiles. Looms have been installed in numbers and proportions that enable various types of work to be done, ranging from high-quality materials for ladies' tailoring to rough khaki material for army greatcoats.

Some distance from the factory, but inside the grounds, are two further buildings which hold special interest. One was a miners' old welfare centre, which at one time served as the factory canteen. This has since been converted a second time to provide three flats for key members of the factory staff and a dormitory for drivers operating between Cumberland Cloth and the parent factory. The other is the new canteen building, which is a model of design, equipment and good management. For an account of the methods employed in this part of the organization, please turn to page 135.

Building Success on the Family Spirit

Continued from page 64

must also do your bit . . . (the alternative) is to find yourself a position better suited to your temperament."

Six foreign workers set the pace in the early days—the firm originated in Budapest—and trained the ex-miners, quarrymen and agricultural workers, who, with their wives, form the labour force. Since then, these people have earned a whole string of welfare facilities, including a sports club with its own grounds, courts and recreation hall, and a superannuation scheme. Today 85 per cent. of a labour force numbering nearly 400 are active supporters of a range of sporting activities. The social centre in Millom town has facilities for concerts and similar events, and each year there is a

spectacular dance, at which "Miss Tannery" is elected—a nerve-racking process, by all accounts.

Judging from the house magazine, the management do not mind taking a joke against themselves—a sign of confidence on both sides. The magazine publishes trade union news and notes, as well as presenting the management's point of view.

Unusual Bonus

The foremen's bonus scheme is something out of the ordinary, since it is based on savings. The management worked out what each department cost in certain "stores" items—power, electric light bulbs, rags, heat, grease, engine oil, brushes, tools, spares, etc.—and offered a percentage back on anything saved. The firm have made substantial savings in valuable materials.

There can be no doubt of West Coast Tanneries' success as a business enterprise. The first organization to be sponsored by the Development Company, they have always been guided by an independent spirit. The money originally

subscribed by the Special Areas Reconstruction Association (SARA) and the Nuffield Trustees has been repaid. The factory, which was leased from the Development Company, is now their own.

There has been expansion, too. The original private company, known as the West Coast Chrome Tanning Co., Ltd., have been succeeded by a public company, West Coast Tanneries, Ltd. More factory building has taken place—one extension was opened in January, 1950, by Mr. Harold Wilson, then President of the Board of Trade. More and more money has been ploughed back for the provision of new machinery.

World-wide Interests

In addition to providing for the home market, the company have appointed agents all over the world; and though still young as an organization, their chrome leathers are already being ordered by trade names which evoke the land which gave them opportunity—Eskdale, Silverdale, Nudale, Millom Whitebuck.

BUSINESS Looks Ahead

November Supplement will Preview Office Equipment

IMPORTANT events in the management calendar are the Business Efficiency Exhibitions organized by the Office Appliance and Business Equipment Trades Association. One of these exhibitions has already taken place this year—at Birmingham in February.

ANOTHER exhibition will be held at Kelvin Hall, Glasgow, from November 4 to 14. Once again BUSINESS will provide special coverage. With our November issue a preview supplement will be published giving detailed descriptions of all new office machines and equipment as well as brief references to standard products.

A COMPLETE list of exhibitors in alphabetical order will be an important feature of the supplement. Large numbers of illustrations will enable executives who are unable to travel to Scotland to see the Exhibition in print.

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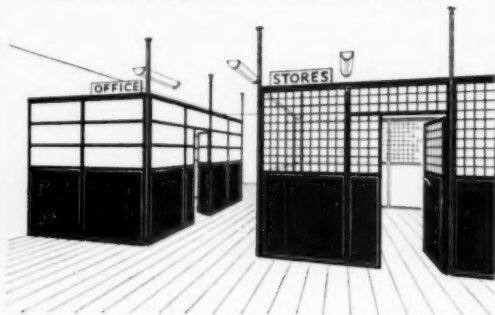
The Calculating Machine which caused a sensation at the Business Efficiency Exhibition this year.



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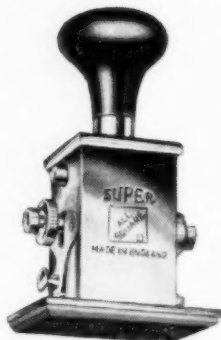
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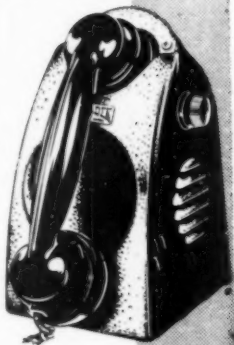
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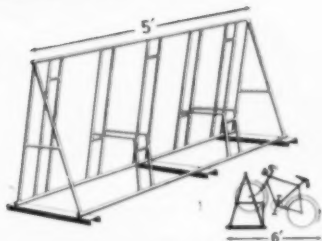
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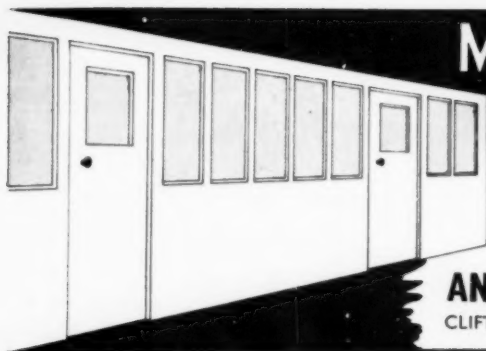
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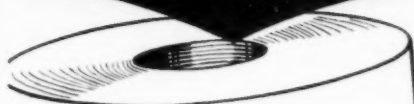
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Practical Help for the Physically Handicapped

How an Industrial Estate Helped the Disabled

By FRANK G. CASEY

WAR memorials take many forms—from stone crosses to community centres. Few of them can be as effective a monument to those that died, or were maimed, fighting for their country as the one at Hillington. For the Estate War Memorial takes the form of a "sheltered workshop," sponsored, financed and largely run by the tenants of the estate, where severely disabled men are enabled to earn their own living and become useful members of society.

Haven Products, Ltd., is the name of the sheltered workshop, and the methods used to select, train and employ the disabled men and to make the firm a solvent commercial concern are instructive to any management that seeks to employ physically handicapped workers.

ONCE the idea of a sheltered workshop had been accepted

by the Hillington Tenants' Association, a preliminary Ways and Means Committee was set up with four immediate tasks:

1. To discover what kind of work the disabled men could undertake.
2. To raise capital for the enterprise.
3. To select and train suitable workpeople.
4. To provide transport for them between their homes and the factory.

Most of the £6,000 capital needed was contributed by the companies on the estate. Several private individuals and two societies also gave money and became shareholders—but not shareholders in any ordinary sense, for no dividends are paid. A board of directors was appointed, who draw neither fees, nor expenses.

Next step forward was the securing of a contract from Thermega, Ltd., for the manufacture



This article in
ONE MINUTE

Tenants of the Hillington Industrial Estate in Scotland made their war memorial a practical one: the formation of a company whose workers are severely disabled. Opened in 1946, it is commercially successful. Profits are ploughed back into the firm—a satisfactory return for the shareholders who receive no dividends, and the directors who get no fees. For the disabled it has meant the chance of working as useful members of society and not being victims of charity. Here are some of the methods adopted to select and train workers and the alterations that had to be made to the plant and equipment.



Modified sewing machine, operated by a leg strap.

of electric blankets. A small factory was leased from the estate company and the first manager appointed, himself a disabled man. He spent some time in the Thermega factory learning the manufacturing processes, and on his return to Hillington the factory layout was planned. Sewing machines were needed to work the blankets, and their manufacturers co-operated in designing controls that could be operated by limbless and paralyzed workers. Surprisingly, these machines turned out to be cheaper than the standard treadle control models.

Benches were constructed to allow chair-bound workers to manoeuvre into a comfortable position, and were arranged to give ease of access. Doors, too, had to be wide enough to take the wheelchairs. Rest rooms were provided, and special lavatories were designed for the severely disabled.



Controlled by elbow pressure.

Extra heating and lighting were necessary, and the workshops were brightly decorated in yellow and green.

All the jobs in the manufacturing process were analyzed, and a schedule showing the requirements of each was drawn up. This was to be a guide for the Medical

Advisory Committee (drawn from hospitals, Glasgow University, social and charitable organizations, etc.) in selecting the work-people. The jobs to be done were: (1) machining with power-driven sewing machines—including threading needles, changing spools, etc. (2) Threading element wire through the pockets in the blankets with a 3ft. long threading rod. (3) Flex fitting and soldering.

Interested bodies, such as the Red Cross Treatment Centre, were asked to submit the names of likely recruits. Some of the latter had already been introduced to light jobs, such as weaving or leather-work. The industrial history and social circumstances of each candidate were taken into account by the selecting committee. While the object was to help those who most needed it, at the same time the concern was to run on commercial lines—otherwise it would defeat one of its main purposes: to convince the cripple that he was a useful member of society who could support himself and not live on charity.

IN March, 1946, the factory opened with two foremen, one

storekeeper and the manager. Within a fortnight 14 other cripples started training. The policy was to concentrate on quality production and to build up the labour force slowly. Thus individuals could be placed to the best advantage from the production and medical viewpoints. Training lasted for 26 weeks, and the Ministry of Labour paid a training grant during this period. Afterwards a basic wage of 2s. an hour was paid; this was later raised to 2s. 1½d. A half-yearly bonus was also paid which averaged £8 per man in the first year.

Forty Hour Week

A collective production bonus was rejected for two reasons: it would accentuate the difference in output between the more and less able workers, and it might tend to over-strain the already handicapped. A 40-hour week was necessary to make ends meet; the actual hours were 8.30 a.m.—5.30 p.m., with an hour for lunch. Lunch was taken at the estate's communal canteen, and arrangements were made to allow the dis-

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abled to be served at a cafeteria on the ground floor.

By the end of 12 months 29 trained men were employed, and production had risen from 2 to 17.7 production units per man per day. Haven Products was on the road to success.

Since those days further progress has been made. Some 40 trained men are now employed, the range of products has been extended to include knitwear and the manufacture of mocassins, numbers of men have been so rehabilitated that they have left to take up jobs in normal factories—considered by Haven to be the acme of success for their venture.

As the organization expanded, it was found desirable to recruit some slightly disabled men to do certain jobs that required mobility and physical strength.

Two other aspects of the organization at Haven deserve attention. These are the transport arrangements and the efforts made to provide housing near the factory.

Some of the men have been provided with powered invalid carriages provided by the Ministry of Pensions. For the others a special ambulance service was started by

the St. Andrew's Ambulance Association. Although this service was provided at greatly reduced cost, it still represents a heavy item of expenditure—over £900 a year. Without the ambulances most of the workers would be quite unable to take a job as they find it impossible to use public transport—especially in rush hours. They do, in fact, contribute to the cost of the service by paying the ordinary public transport fares.

The problem of transport should eventually disappear when plans to provide a small housing estate near the factory have been completed. Some 20 houses are eventually to be built; some of these are already complete and occupied. Money for this project was provided by the Scottish Branch of the British Red Cross.

Assessing Results

IN assessing the results of the Haven Products experiment (for experiment it was, in the early days at least), two questions must be answered (1) Has the enterprise achieved financial stability and independence? (2) What have the effects been on the men?

Although actual figures are not available for publication, the directors are confident that the company can continue to prosper sufficiently to allow an annual surplus to be ploughed back.

The best answer to the second question is the evidence of the men themselves. Most of them are obviously thrilled to work again, and there is in the atmosphere of the workshop a happiness, an enthusiasm, and a sense of corporate life and team spirit that is unmistakable. The specialist physicians and surgeons, who carry out an annual review of the workers, have often remarked on the favourable influence of the work on the clinical progress of the patients.

One of the men himself should, perhaps, be given the last word. He wrote to the firm at Christmas: "I can well remember last year at this time. The future appeared to stretch before us with no sign of a lucky break to encourage us. My mind was never at rest, and often I wondered where it would end."

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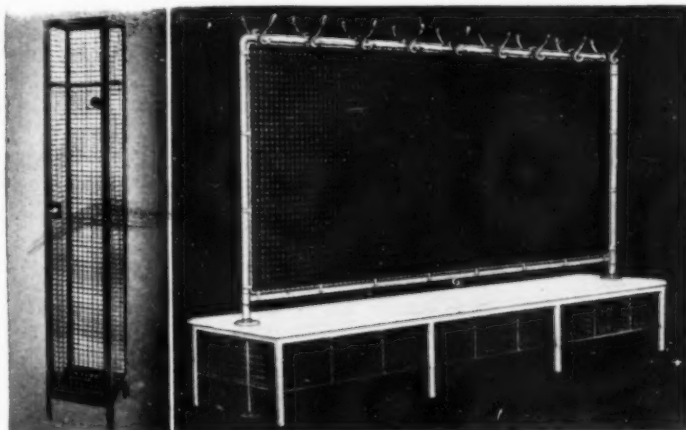
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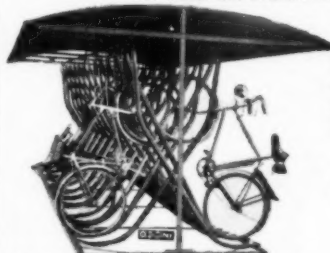
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Ticket Machine Cuts Waste, Speeds Service

By BRIAN CUMMINGS



Exchange of tickets enables the management to serve between 250 and 300 people in less than ten minutes.

MORE than one industrial area in Britain has a special problem in canteen management: how to combat the local tradition of eating stodgy snacks—or "snaps," as the miners call them—instead of hot meals. In Cumberland, the Cumberland Cloth Co., Ltd., have gone a long way towards solving it by providing an attractive building some distance from the place of work, and first-class meals at very low prices.

A big factor in keeping down prices has been the installation of an automatic ticket machine, which has brought four main advantages:

1. Staff and workers buy their meal tickets a day in advance. This reduces the time required to enter the canteen and collect the food, and obviates employment of extra helpers at the servery.

2. Advance purchase of tickets provides detailed information concerning meals to be prepared, including the number of soups, main

dishes, vegetables and sweets. Thus waste of materials is avoided.

3. Exchange of tickets on the day itself facilitates preparation of Ministry of Food returns, and frees the manager for more productive work.

4. The ticket machine can be operated by a member of the office staff in the factory, thereby avoiding employment of a skilled cashier.

Less than 10 minutes are required to serve one sitting of 250 to 300 people, though the canteen staff consists of one manager-cum-chef, with no more than five assistants, who share all the remaining duties, including frying, vegetable cooking, serving and cleaning up. In one day between 450 and 500 main meals and light meals are served, and no fewer than 1,000 to 1,500 snacks and sundries.

The modesty of this organization in relation to the job done is clearly demonstrated in the prices charged. A typical menu includes



This article in
ONE MINUTE

The Cumberland Cloth Company's success story has already been told on page 60. Evidence of progressive management can be seen in the canteen, which provides first class meals at very low prices. This is achieved by adopting new ideas: for example, installation of an automatic food ticket machine saves staff, facilitates economic preparation of food, and speeds service.

roast lamb or beef, peas and roast potatoes for 6d.; steamed fruit pudding and custard, or baked semolina, for 2d.; peas and potatoes only (for vegetarians) for 2d.; half a pint of tea for 1d., and a pint for 1d. Bread and butter costs 1d. per slice, cakes 2d. and 2½d., dessert fruit 2d., and ice-cream 3d.

On succeeding days the menus included fried fillet of cod, gooseberry flan, cold meats and salad, fruit trifle, shepherd's pie (fresh meat only), steamed raisin pudding, fish, and roly-poly pudding. Prices of all these items were consistent with those already quoted, which means that a customer would have some difficulty in

Facts with Figures

- 1. SPEEDY SERVICE.** 250 to 300 people are served in less than ten minutes.
- 2. SMALL STAFF.** One manager - cum - chef and five assistants.
- 3. LOW PRICES.** Main course (meat and two vegetables) 6d., sweet 2d., half pint of tea 1d., cakes 2d. and 2½d.
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spending more than 1s 4d. for a meal consisting of soup, main course and vegetables, sweet with ice-cream, bread and butter, and tea.

Even allowing for the subsidy and the ticket machine, it is obvious that the canteen must be particularly well managed to provide meals of this quantity and quality for such low prices. The manager, T. W. J. Selby, attributes his success to the following five policies:

1. *Good buying.* Mr. Selby has a great deal of experience of London markets, but he has also taken the trouble to get to know local conditions.

2. *Avoidance of waste.* If uncut cooked meat is left over, it is used for snacks and overtime teas.

3. *Personal weighing and distribution of foodstuffs.* "Assistants seldom weigh accurately," says Mr. Selby, "so I always do it myself."

4. *Genuine love of the job.* "Without this," he says, "you are lost. I enjoy the opportunity of a little extra cooking, and take pleasure in making something attractive for overtime teas, as well as main meals."

5. *Discipline on both sides of the servery.* Canteen staff must be efficient, but the customers must also behave themselves. No rowdiness is permitted, and complaints must be referred to the manager personally. "I won't have the girls bullied," says Mr. Selby.

Mr. Selby does all the important cooking himself, but allows time



Entire staff of the canteen consists of only six people.

servery has paid dividends. In three years there have been no replacements of equipment, utensils or china—a remarkable achievement.

For the record, the kitchen equipment consists of the following items: one 50-gallon boiler, one 30-gallon boiler, four 10ft. hot plates, one double fish fryer, one potato

chipper, one slicer, two steaming ovens, two electric ovens, three gas ovens, one gas stove, one washing machine, one potato peeler, and one large mincer.

Incidentally, canteen staff clock in and out, like the workers in the factory. Regulation must suit their temperaments, for they are never late.

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Other features include a light fail picture that indicates when fat or oil is at the required heat for cooking; a cool zone and sediment trap with control valve



for easy cleaning; and long immersion elements that give a very low intensity of heat per square inch and so avoid burning the fat. These elements are made of Admiralty bronze and are of an anti-toxic character.

Enquiry Ref. No. C.10/3.

MEMO FOR TOP MANAGEMENT

The canteen article in the September issue of *BUSINESS* completed the series of five special articles by Winifred McCullough on the Finance of Industrial Catering. In the November issue, the author will be summing up the many practical points and policies which appeared in this important series.

for training his staff, all of whom were completely unskilled when they joined the firm. Another factor in the efficiency of the canteen is the successful choice of equipment and careful training of staff in its use and maintenance. Here again Mr. Selby's policy of good order on both sides of the

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CONTENTED**

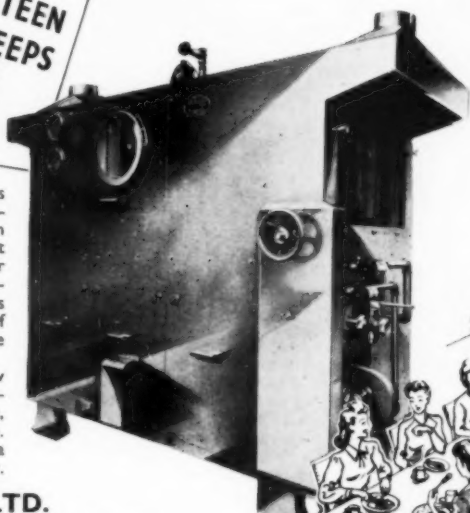
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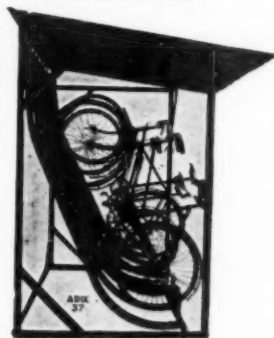


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Spinning Index

THE idea of putting record cards on wheels has proved so popular that one manufacturer has produced a miniature version which can be put on the desk and used for addresses, telephone numbers, stock records and other types of index work. This is the *Spin-It* rotary index, which holds 500 cards but measures only $3\frac{1}{2}$ by 6 by $5\frac{1}{2}$ inches.

The index is made of dove grey mottled steel with silver grey plastic knobs on either side to facilitate rapid reference. The cards measure $3\frac{1}{2}$ by $1\frac{1}{2}$ inches and are slotted for easy insertion and withdrawal.

Enquiry Ref. No. S.10/21.

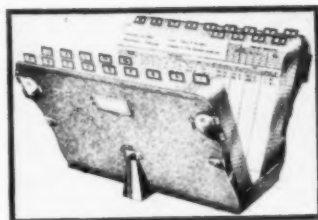
Ready for Posting

LAST word in modern posting tray design is the *Postmaster*, a new product which is being made in four sizes to house cards in the

following widths: 12, 14, 16 and 18 ins. The *Postmaster* is made of heavy gauge steel and the front and back tilt plates are secured to the base by heavy duty hinges. Specially designed supports come into operation when the tray is opened—the supports are connected with both the front and rear tilt plate and when opened expand outwards from the base.

One of the main features of the tray is its "short depth"—the expanding base eliminates the risk of toppling. Close fitting hinges on each side also give strong support to the tilt plates. A locking device has been combined with the lifting handles. This device also enables the tray to be opened quickly—you simply push the opening triggers and the locking handles swing to the back of the tray.

When open the trays give a wide posting "V" to the contents and the inside of the base has serrated strips of metal to stop the cards sliding. Offsetting is possible by using a tray one size larger than



This tray won't topple.

the card. Overall dimensions: height from base $10\frac{1}{2}$ ins.; width $1\frac{1}{2}$ ins. wider than the standard card size; distance from back to front when closed $6\frac{1}{2}$ ins., when open 14 ins.; capacity $5\frac{1}{2}$ ins.

Enquiry Ref. No. S.10/22.

Fluorescent Paper

FLUORESCENT paper is now being made in this country under licence from an American



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company. This paper is available in five vivid shades and can be printed with normal inks by letterpress, litho, gravure and silkscreen. It can also be used for poster writing. Coated on one side with fluorescent ink, the paper is ideal for catalogue and magazine covers, posters, labels, leaflets, folders, insets, etc.

The outstanding brilliance of fluorescent paper is due to activation by the ultra violet rays of daylight. It glows with the brilliance of neon and is particularly effective at dusk. It should have a great future in advertising and window dressing.

Enquiry Ref. No. S.10/23.

Sketch Master

MOST up-to-date adaptation of the "square guide card under tracing paper" method of producing sketches is the *Sketch Master* drafting pad. Its special feature is a hinged pocket attached to the grid card which fits on to the back board of the tracing pad. When pressed firmly in position the tongue in the pocket engages in a cut out which prevents the grid card from moving when placed in position under the tracing sheet. A grid card is therefore a lasting feature of the unit; it is not destroyed when the pad is finished but can be made to last for many years. Refill pads are available and change of scale is effected by reversing the grid card. If the sketch is to be finished without the aid of the grid it can, nevertheless, be quickly removed.

Enquiry Ref. No. S.10/24.

Sticks Stamps

FIRMS whose post is not large enough to justify the installation of a franking machine will welcome the introduction of a simple, cheap and efficient means of applying stamps at speed. This

This device moistens and dispenses stamps at speeds up to 2,000 an hour.



is the *Pronto-Post*, a device consisting of a water chamber, moistening pad, envelope sealer and transparent container that holds a roll of stamps. Movement of the thumb ejects one stamp, ready-moistened for application to the envelope or parcel.

The rolls of stamps employed are identical with those used in Post Office machines and can be obtained at any main Post Office. A separate dispenser is used for each stamp denomination, but the device is cheap to buy, and so fast in operation, that it soon pays for itself. The transparent body fits

the hand snugly and enables the supply position to be checked at a glance.

Apart from stamps, the *Pronto-Post* can also be used for moistening the flaps of envelopes and the edges of gummed labels. A further application is the moistening and dispensing of small pre-printed and perforated labels used as price tags, identification marks, etc. Here again the advantages are cheapness and ease of operation. Whatever the application, the *Pronto-Post* has no moving parts to go wrong or wear out.

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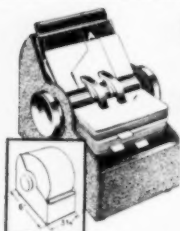
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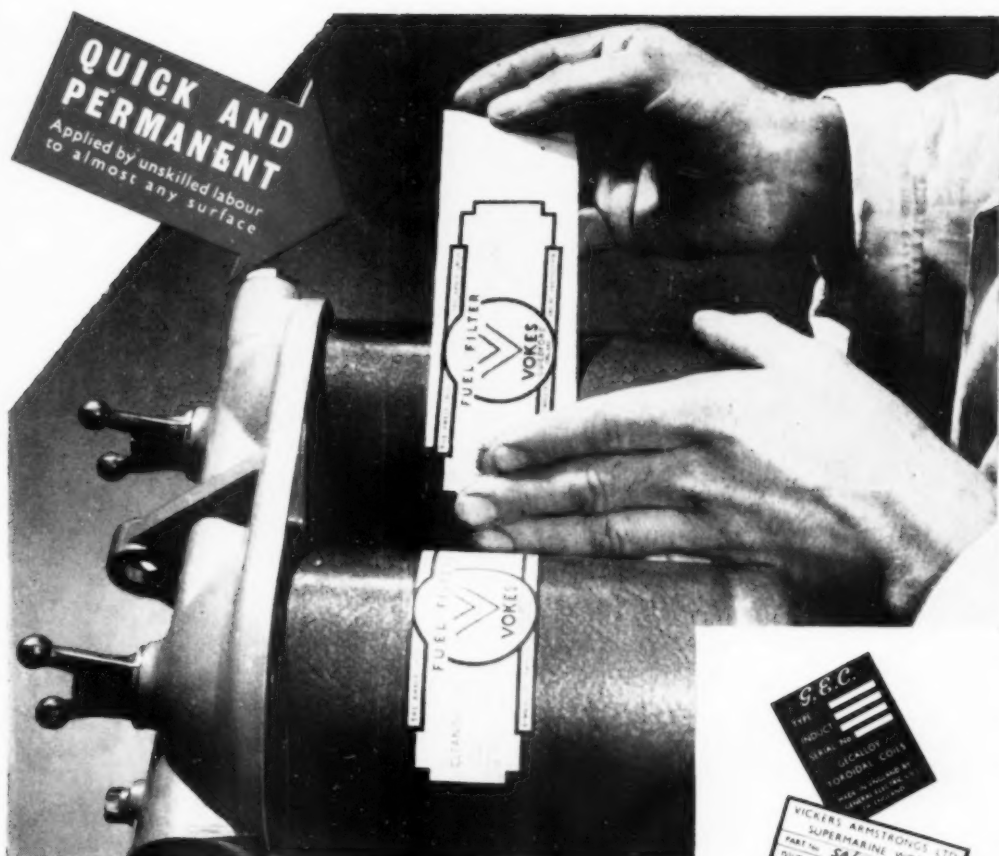
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THONG LEDGER

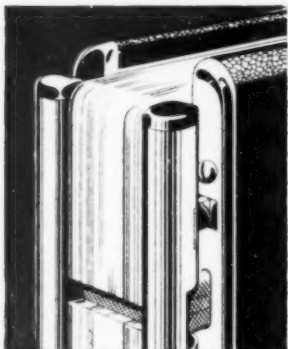
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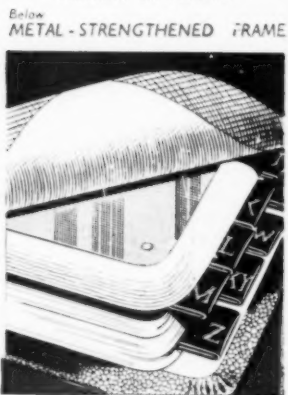
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